FEDERAL GOVERNMENT PROVISION OF PUBLIC INFORMATION:

ISSUES RELATED TO PUBLIC ACCESS, TECHNOLOGY, AND LAWS/REGULATIONS

For

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EXECUTIVE SUMMARY

"Government information" is a broad term that encompasses both published and unpublished information which the Federal government either does or does not make public. "Public information", is collected and/or developed at Government expense or as required by public law, and not considered to be classified, personal, or otherwise subject to exemption from the Freedom of Information Act or the Privacy Act.

Users and Public Access

Although it is possible to hypothesize about users and uses of public information, there is limited research upon which to base decisions and ensure that public information resolves user information needs. Such research is necessary to relate the information gathering behavior of users to formats and purposes of the public information.

An appropriate model on which to pattern such research was developed in the late 1970s, for the Department of Agriculture, to identify the information needs of farmers and ranchers. Once gathered, this information can be useful in policy decision making and in refining Governmental information dissemination mechanisms. However, it cannot necessarily be assumed that the public will make greater use of public information simply because a technological delivery system has been superimposed over the information.

Key policy issues are related to determining the level of responsibility the Federal government has for the provision of public information, specifying _which_ information is to be disseminated to the public and how it can be disseminated most effectively, clarifying the interrelationships among stakeholders in the information sector, relating the creation and dissemination of public information to specific user information needs, and resolving the degree to which public information is a societal good, a commodity to be bought or sold, or a capital investment for the overall increased productivity of society at large.

Information Technology

"Information technology" is the application of mechanical or electronic tools which direct, shape, and control, the production, delivery, and acquisition of information. "Effects" of information technology on Government provision of public information are considered as any results or impacts which affect an individual's ability to: stay adequately informed of the activities and information services or products which the Federal government offers or in which it participates, or identify and gain physical access to public information for the resolution of specific information needs.

A review of the literature related to the effects of technology on access to public information emphasizes that politics will continue to dominate discussions of appropriate stakeholder roles within the information sector. At the Federal level, information technology is primarily regarded as a means to increase the effective collection, storage, organization, and internal retrieval of public information. Minimal concern is given during the design and implementation of Federal information systems to enhancing user's access to public information.

Traditional dichotomies between "public" and "private" information providers hinders the understanding of the effects of information technology on the Government's provision of public information. Stakeholders in the information sector can use, produce, disseminate, and attach numerous value added enhancements at any given point in the life cycle of the information service or product. A decentralized approach to Federal information services and products encourages the development of contradictory, and at times competing, information technologies. Further, information gaps in the American society appear to be widening as a result of the increased emphasis placed on economy in Government and inequitable access to information technologies by various user segments.

Key issues to be resolved in this area relate to determining the degree to which public information made available through information technologies enhance or detract from user groups' access to that information, clarifying the purpose of the application of information technology in a specific agency prior to implementation of that technology, determining the degree to which the Government should provide value added enhancements to existing information systems, and resolving the Government's responsibilities for training and assisting users to exploit information technologies that carry public information.

Federal Legislation and Regulations

Chapter 3 summarizes and analyses eight pieces of Federal legislation and regulations: Guidelines of the Joint Committee on Printing; the statutory base of the National Commission on Libraries and Information Science; the Federal Program Information Act; the Paperwork Reduction Act; Title 44, USC (Government Printing Office); Title 15, USC (National Technical Information Service); the administrative law basis for the National Audiovisual Center; and the policies of the Office of Management and Budget. The chapter also highlights other related legislation and regulations.

There is no single corpus of law to coordinate information policies of the various Federal agencies, to eliminate ambiguities in Federal information policies, or to clarify the confusing and contradictory array of services that agencies provide. Gaps, ambiguities, limitations, and contradictions among these laws and regulations are identified.

The Paperwork Reduction Act, combined with the desire of the Reagan administration and Congress to reduce Federal spending and to take into account the needs and interests of other stakeholders in the information sector to make Government more efficient, have served as the central focus for the development of current information policies. Using the Paperwork Reduction Act and specific directives, OMB is the primary player in the development, maintenance, and enforcement of Federal information policies. However, OMB operates in a vacuum and encounters no major rival to its view that economy in Government and the role of for-profit stakeholders in the information sector are the two critical components for the current development of Federal information policy.

Key issues to be resolved in this area relate to the degree to which information policy development and enforcement is to be centralized or decentralized; the need to clarify the relationships and legal bases for various public information clearinghouses such as the GPO, NTIS, and ERIC; resolving the myriad methods by which various Federal agencies price public information; determining if the Government should attempt to make a profit from the sale of public information; providing safeguards which insure that privatized public information will, in fact, be made accessible and available to users--regardless of the format of that information; and providing both horizontal coordination (across agencies) as well as vertical integration (within agency) of information policy.

Review of Issues

A review of recent publications identified some 269 issues related broadly to Government provision of public information. The final chapter of the report reviews these policy issues, presents a typology of the issues, and identifies options for their resolution. Those issues, which the authors see as most significant, are analyzed in terms of the possible effects of each of the options suggested. A compatibility analysis of the various options resulted in the synthesis of three basic policy strategies which were then analyzed in terms of their potential impacts regarding Government provision of public information.

The report concludes with a call for conducting research on specific topics and the need for accessing access to public information from the perspective of the user. The user may encounter a number of barriers to access public information, may or may not rely on intermediaries to assist in accessing public information, and, as a result, may or may not access public information. The notion that the Federal government provides a "safety net" for equal opportunity to public information is challenged. If adequate access to public information is to be accomplished, greater consideration for the social good and dissemination of that information, rather than economy in Government and using technology primarily to better collect and organize Federal information is necessary.

Issues to be Addressed

The report identifies five broad categories of policy issues which require attention:

- Federal organization for information policies
- relationship between the Federal government and other stakeholders in the information sector
- information technology
- the economics of public information
- public access and availability to public information

Within these various categories, the report shows that there is a lack of clear definition of "public information;" many Federal officials are naive in their assessment of the user's ability to access public information effectively; there is confusion between managing information activities in an efficient manner as opposed to managing them for-profit; existing legislation and regulations related to information policy is frequently contradictory, ambiguous, and confusing; the design of Federal automated information systems rarely includes factors that enhance public access; increasing authority of OMB for the formulation and administration of Federal information policy has an impact on agency management of public access to that information; and users wanting access to public information encounter numerous barriers. These barriers are significant and have the effect of decreasing the amount of public information accessible and available to the public.

INTRODUCTION

This report is the result of a response to a request for a proposal from the U.S. Office of Technology Assessment entitled Government Provision of Public Information. The RFP emphasized that the topic was not to address issues related to the Freedom of Information Act, the Privacy Act, the Sunshine Act, or other legislation/regulations related to civil liberties. Specifically, the tasks to be accomplished for the project were:

1. Categorize the significant types of public information, identify current and potential users and providers of Government information (both public and private), and describe current and prospective means for disseminating such information (electronic and nonelectronic).
2. Review and synthesize prior studies on the effects of information technology on Government provision of information. Provide a bibliography and a list of sources relevant to the subject.
3. Summarize and analyze the legislative history and current status of relevant public laws and regulations (e.g., Title 44, USC, and the Paperwork Reduction Act of 1980) and determine whether there are any conflicts and/or gaps.
4. Identify and analyze the principal policy issues involved in the Government provision of public information, including an analysis of the implications of the issue for provision of Government information and policy alternatives for resolving the issue.

Because of the broad scope of the project, part of the material produced is contained in the various appendices. However, the report is organized so that each chapter corresponds to these tasks.

The report was written under difficult time constraints. There were available only seven weeks between the approval of the detailed outline for the project and the submission of the first draft; then, there were another three weeks for revision of that draft. However, every effort was made to identify, review, and analyze the important literature related to the above four tasks. Further, the authors were able to conduct personal interviews, as part of the data collection process, with spokespersons from a number of Executive and Legislative branch agencies and offices and solicit reviewer comments on each task.

The nature of the project tasks encourages a broad overview of topics related to public access to Government provided public information, the effects of information technology on Government provision of public information, analysis of selected legislation and regulations related to Federal information, and analysis of policy issues related to each topic. Thus, each chapter attempts to provide a synthesis and discussion of significant topics and issues rather than an item by item detailed analysis.

Throughout the report, the authors have stressed the need for coordinated, empirical research on many of the topics. Currently, the majority of the literature related to these topics are limited in that the writings represent opinion or review essays and often-times make critical assumptions related to political, economic, or social philosophies which are not clearly set forth. It is the hope of the authors that the results from the various studies funded under this project by the Office of Technology Assessment will, when combined and reviewed, provide a basis for establishing and implementing a research agenda related to the Government provision of public information.

This study of Government provision of public information and the effects of technology on that provision concludes that the Federal government has (1) inadequately developed specific strategies to insure the effective provision of public information, (2) allowed contradictory and ambiguous legislation and regulations related to public information to emerge (3) relied, primarily, on policies of "economy in Government" as a basis to establish procedures related to public information dissemination and the application of information technologies, and (4) has failed to study, exploit and fund the nation's depository libraries effectively as intermediaries in providing adequate access and availability to public information in all mediums and formats.

Public information is a common denominator whose access must cut across all user segments, geographic regions, and organizational/professional activities. Its health and well-being is vital to the long range success of American democracy. The specific issues and policy options summarized in Chapter 4 must be addressed and resolved to further stimulate national growth and productivity, protect individual freedoms and rights, and insure the social health of the nation.

Charles R. McClure and Peter Hernon
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CHAPTER 1

PUBLIC INFORMATION

The Federal government produces information of value for almost anyone in the country and on almost any subject. This information can be of value to people in a variety of situations, e.g., work, research, publication, recreation, or their daily life. This information pertains to all age groups and provides a communication link between the Government and the people which it serves. In addition to published books, pamphlets, etc., the Government disseminates information which is not formally published. Such information may be conveyed orally, by letter, in machine-readable form, and so forth.

Against this background, the purposes of this chapter are to:

- define key terms relating to public information, its dissemination and use
- develop a typology of types of public information
- identify the formats in which public information appears
- identify producers and disseminators of Governmentally produced public information
- relate types and formats of public information to the producers and disseminators
- identify users of public information and patterns of information gathering
- identify areas and issues related to the use of information technology in resolving needs for public information
- identify areas and topics which would benefit from research and development studies

The discussion of these topics will serve as background to the other chapters on information technology, legislation and regulations related to the Federal government's provision of public information and access to this information, and information policy issues.

Definitions

Government Publications, Documents, and Information

Typically international organizations differentiate between _documents_ and _publications_, although the distinction may be imprecise and subject to change. Documents are the official records of meetings and other material issued for internal use; however, they may be of interest to outside users and reach a larger audience. Publications, on the other hand, are more widely distributed, fulfill a goal of the organization, and inform the public. Complicating the distinction is the fact that documents may later become publications.

When dealing with the United States Federal government, distinctions between what constitutes a publication and document become even less precise. It is common for writers and others to use interchangeably the terms "government publications," "government documents," "public documents," and "public information." One study differentiates between publication and document; a publication comprises:

> any portion of government information produced by a Government entity which is made available to the public through printing, electronic transfer, or any other form of reproduction at Government expense and which is offered for public sale/rental or for free distribution (National Commission on Libraries and Information Science, 1982, p. 78).

In contrast, a document signifies:

> a specific identifiable segment of information produced by a Government entity which may be made available to the public upon request under law or by administrative discretion, but which is not usually considered of such broad public interest as to warrant general publication or distribution (Ibid.).

Similar to the definitions used by international organizations, both of these are general and are of limited practical significance. They do, however, underscore the difficulties encountered in advancing definitions for the information services and products produced and distributed by the Federal government.

One definition of "publication" (or document for that matter) is "informational matter which is published as an individual document at Government expense, or as required by law" (Title 44, United States Code, section 1901). This definition has a narrow application -- only to the one Title in the U.S. Code; compounding the limitation is a lack of definition of "informational matter" and "as an individual document." The emphasis on "published" matter does not take into account the impact of technology on information production and dissemination, and the variety of formats in which information appears.

Realizing the weakness of the definition, and that much of Title 44 is based on dated legislation, the Joint Committee on Printing encouraged a review and revision of the Title. In 1979, H.R. 4572, which provided for the improved administration of public printing services and the distribution of government documents, and the companion Senate bill (S1436), were introduced into Congress. Although the legislation failed to become public law, it did highlight the weaknesses of the definition contained in Title 44.

Any comprehensive new definition must take into account a myriad number of exceptions and special cases; Chapter 3 highlights proposed definitions and notes these exceptions and special cases. It is exceedingly difficult to develop a general, all-inclusive definition, which will be generally accepted. Librarians and other groups commonly accept the the Title 44 definition as adequate for developing a frame of refernece (e.g., Morehead, 1983) but insufficient for setting information policy. Since the Government Printing Office (GPO) still operates under this general definition, it is restricted in the publication formats which can be made available through its sales and depository library programs.

Information policies of the 1980s and beyond must define key terms and strive for general acceptance of these definitions. Prior to presenting an analysis of public information types, formats, and users, it is necessary that certain terms be defined. First, _information_ is the content of a message or communication which is conveyed and assimilated by the person receiving that message. "Knowledge derives from the process people use to understand and analyze information." Information is a "main ingredient of knowledge" (Becker, 1978, p. 14). Information content is separate from the physical form of the message or communication. It usually leads to a decision, action, or behavioral change, or it may add to one's knowledge. This report is concerned with the types, formats, availability, and dissemination of available information for public use, rather than the content.

Government information is a broad term that encompasses both published and unpublished information which the Federal government either does or does not intend to make public. The information may be compiled, generated, and/or maintained by the Government. Public information, as defined by the Office of Technology Assessment in the RFP for this contracted study, is that which is collected and/or developed at Government expense or as required by public law, and not considered to be classified, personal, or otherwise subject to exemption from the Freedom of Information Act or the Privacy Act. Except for the references to the two acts, this definition is similar to that contained in Title 44, United States Code.

Another definition of public information is that:

> ... which is collected, produced, or created by, or for the Federal government, with Federal funds, primarily for the purpose of communicating with, educating, or informing one or more segments of the public. The distinguishing characteristic of public information is that the agency actively seeks, in some fashion, to disseminate such information or otherwise make it available to the public (National Commission on Libraries and Information Science, 1982, p. 77).

However, this narrow definition does not clarify the meaning of "actively seeks" and explore the basis on which an agency makes its decisions. The Government often does not engage in dissemination and presumes a passive role, that of merely making public information available. Activity, or the lack thereof, is often a political or economic decision. Should the activity define what public information is or is not? Certainly activity defines "publically distributed information." The key point relates to the right of the public, not what someone else decides the public should receive.

A definition of public information advanced in the late 1970s for Title 44, United States Code, revision underscores the complexity and illustrates "a bewildering maze of terms and exemptions;" public information comprises:

> a document, publication, form, machine-readable data file, microform, audiovisual presentation, or similar matter, reproduced for public use, wholly or partially at Government expense, by printing or other means but such transfer does not include any such matter which, as determined by the issuing entity ... (A) is required for official administrative or operational purposes only and is without public interest or educational value or (B) is classified or designated under statute or executive order as requiring a specific degree of protection against unauthorized disclosure for reasons of national defense or foreign policy (Morehead, 1983, p. 26).

Realizing the difficulties in defining government publication, one study which considered the issue of ownership of information used the term "governmentally distributable information" (National Commission on Libraries and Information Science, 1982, 22). For a similar reason, public information can be regarded as that which is "distributable." The information has been

> brought together for Governmental purposes from information in the public domain or within the scope of 'fair use,' or owned by the Govenment itself, or that the Government has obtained rights to distribute, or that is distributable under the Freedom of Information Act, subject only to the statutory limitations ... (Ibid., p. 22).

"The phrase 'brought together' is interpreted as including generating, compiling, processing, collecting, and analyzing" public information (Ibid).

Public information, therefore, encompasses that which a Government agency chooses to impart on its own, or is forced to release. The information is potentially available through a formal process such as a lawsuit or the Freedom of Information Act (FOIA). The matter of potential availability is complicated by factors such as who can make a request -- an individual, a corporate person, a lawyer, a non-citizen, an aggrieved party, etc.

By contrast, private information is intended solely for internal use within Government and not for public consumption. It held in confidence out of respect for a privacy right or a statutory obligation. It therefore will not be released under the FOIA, the Privacy Act, or other statutory and administrative law (see Figure 1-1 for a depiction of government, public, and private information).

Recognizing that the term "private information" is exceptionally controversial and likely to create serious ambiguity and confusion, the authors of this report see the term as possibly encompassing six different categories:

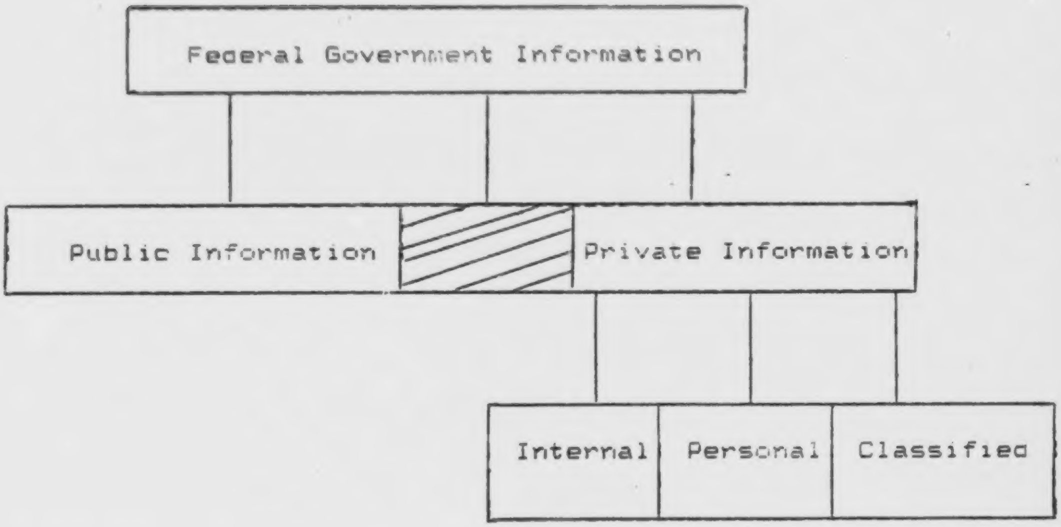
- information "private to the Government" is intended for internal use and not for external distribution. This category encompasses internal memoranda, work "in progress," correspondence (personal in the sense of being addressed to an individual, but clearly in an official capacity), and perhaps other similar kinds of records. The fact that the intent is one of internal distribution, though, in no way by itself should limit access through such means as the Freedom of Information Act.

- personal information relating to employees of the Government includes personnel files, personnel correspondence (addressed to the individual but not in an official capacity), confidential letters of evaluation, and other information of a similar kind.

- personal information relating to persons not employees of the Government includes information collected by the Government about persons. Some of this information (e.g., that of the Internal Revenue

FIGURE 1-1

DEPICTION OF FEDERAL GOVERNMENT INFORMATION


Federal Government Information
Public Information
Private Information
Internal
Personal
Classified

Service and the Social Security Administration) may be statutorily protected, while other personal information may not be so protected.

- national security information (e.g., that which is military classified) is quite different from the previously listed categories, although there may be some overlap. This category includes data related to security clearanaces for persons. The range of persons to whom this kind of information may be made available is determined by a "need to know."
- private information, in the colloquial sense, is information in the possession of private individuals.
- private information also refers to ownership. To illustrate, there is nothing "private" about Chemical Abstracts data, in any of the prior senses, although it is privately owned -- copyrighted.

For the purposes of this report, private information refers specifically to the last two categories. The other four categories, for the sake of convenience, can be placed in the gray area between public and private information.

Prior to discussing this gray area, the terms "internal information," "personal information," and military security information" need clarification. "Internal information" is intended for internal use within the Government and not for public consumption. Such information includes both administrative information and personal information about employees of the Government related to their appointment and position. Internal information may be released under the Freedom of Information Act, provided distribution is not limited by the Privacy Act, national security, or other statutory and administrative law.

"Personal information" is gathered by the Government about persons, both outside and within the Government, for legitimate purposes of Government. However, distribution is controlled by either specific legislation (e.g., that for the Internal Revenue Service, Bureau of the Census, and Social Security Administration) or general provisions of the Privacy Act. Access to "military security information" is controlled by military classification schedules and a "need to know."

The availability of information in the gray area between released (public) and protected (private) information would be determined through mechanisms such as the Freedom of Information Act (FOIA), the Privacy Act, or judicial review. There are numerous examples of information falling into the gray area. Federal agencies such as the Internal Revenue Service and the Securities and Exchange Commission collect some information which is personal or proprietary. The Government collects the information

> presumably to further legitimate public purposes. However, such collection may sharply conflict with what individuals and organizations believe to be their rights of privacy, and thereby creates an obligation on the Government to protect the information and use it only in carefully prescribed ways (Congress, 1981a, p. 50).

In some instances, the Federal government collects information intended for internal use; the information may later become public. One example is the initially private data collected for the decennial Census of Population and Housing; some 73 years later individual household records become public. For more recent years, primarily only summary data are available. Another example might occur when a member of the general public is denied access to specific information under the Freedom of Information Act. A Congressional committee requesting similar information might obtain it -- and then make it public in an appendix of a committee hearing or committee print. In yet another case, the Federal government may release declassified information, then later reclassify and withdrawn it from public scrutiny.

In some instances, both Congress and the Executive Branch have developed guidelines for the types of information which can be withheld and have set schedules by which private information can become public. For example, Title 44, United States Code, section 2114, places responsibility for developing access policies to Congressional records stored at the National Archives and Records Service with the house of Congress which generated the records. The Senate has established procedures for identifying and transferring Senate records to the National Archives. These guidelines, "Senate Committee Records: A Guide to Disposition and Public Access" (Congress, 1981b), also cover the disposition "of non-permanent materials on a timely and efficient basis" (Ibid., p. i).

Public Access

Accessibility includes the degree to which (1) public information is accurately identified bibliographically in reference works, (2) the information is made known to the public, and (3) the public seeks information and the technological, social, economic, and political barriers which they might encounter in gaining access to that information (see Chapters 2 and 4). Public access exists when all potential user segments of the public have an equal opportunity to obtain public information.

Availability presumes that public information can be obtained in a convenient format, in understandable language, and in a time frame whereby the information is current and has utility. Accessibility is meaningless if people cannot obtain a copy of a pertinent government publication, if the information is contained in a format (e.g., machine-readable, electronic, or microform) which requires the use of technology or special viewing or reproduction equipment not in hand, if the information can be located but not obtained within a time frame acceptable to the user, if the information is priced higher than an individual can afford to pay, or if a Federal department or agency loses, misplaces, or otherwise does not make the information obtainable.

Public access encompasses both accessibility and availability. Access and availability to government publications or documents are not always the same as access and availability to public information. Access and availability to publications or documents are a prerequisite for access and availability to public information. The term "publication" or "document" implies the packaging of public information, and that packaging includes a variety of publication (or availability) types and formats.

In this context, critical questions become "What is adequate public access" and "How is adequacy defined, achieved, and measured?" The answer to these questions must take into account the various methods by which public information is obtained, and the effectiveness and efficiency of these methods in meeting the information needs of the public. In the case of the depository program administered by the GPO, member libraries are expected to "make depository publications available for the free use of the general public" and to answer reference questions or make referral to a source which will answer the questions (Guidelines, 1977, sections 9-1 and 9-2)(for an explanation of the depository program see Hernon and McClure, 1984; Hernon, McClure, and Purcell, forthcoming). The question is "Do they really they really do these, to what extent, and how accurate are their responses?" McClure and Hernon (1983) discovered that some libraries refused the general public access to the depository collection, that documents department staff members could only answer a small percentage of test questions accurately, and that the majority of unanswered questions were not referred to another source -- either internal or external to the library.

Any assumptions underlying public access must be identified and the effectiveness and efficiency of that access measured. Adequate public access must be clearly defined and take into account the receipt of:

- understandable, complete, accurate, and current information
- information at an affordable cost (balancing the economic good against the social good, if this is deemed desirable)
- information in a convenient and readily usable format
- the cost of the information
- information which can be obtained with a minimal amount of physical effort

Public information should be openly available, which means "available without prior restrictions (except those explicity identified in the Freedom of Information Act [the Privacy Act and some of the other statutes identified in Task 3] and without procedural complications" (National Commission on Libraries and Information Science, 1982, p. 23). However, availability and accessibility are meaningless if the information need is not recongized and public information is perceived as a logical option for the resolution of an information need.

Access to public information and the concept of adequacy must also be viewed in relation to the following factors:

- political and organizational: the views, value assumptions, and objectives of a bureaucracy or politician on the role of the Government in the provision of public information. Another factor is the degree to which the management of public information can enhance the accomplishment of political objectives
- information to be made available: identification of the content or specific data elements which the Federal government might provide to the public
- bibliographic control: the degree to which the information is identified, accurately described, indexed, and listed in appropriate reference sources
- dissemination methods: the processes (depository library programs, clearinghouses, bookstores, online data base services, etc.) whereby information is made available to the public
- publication formats: the decision about whether to use paper copy publications, microforms, a magnetic tape, etc.

Effective public access presupposes that the Federal government encourages both accessibility of, and availability to, public information. The Government must also fully recognize its responsibility to communicate (inform, educate, and care for) with those whom it governs.

Other Definitions

Certain other terms must also be defined in order to set the following discussion of information policy. First, *dissemination* of public information encompasses the processes by which a Government agency "providing information actively distributes it to users, without the necessity for the users to seek access for each such distribution" (National Commission on Libraries and Information Science, 1982, p. 19).

By contrast, Government *provision* of information refers to the creation, generation, compilation, and production of information. The Government makes the information available but users must seek access to it. No active distribution policy or obligation is assumed or operational.

Information needs occur in those situations where people require information for decision making, while *information gathering* involves people seeking actively to identify a message a message or communication to satisfy a perceived need. And information is available from a variety of *information providers* -- oneself (memory, observation, etc.), the electronic and mass media, interpersonal providers (e.g., friends and colleagues), and institutional providers (e.g., associations, businesses and organizations, churches, Government agencies, learned societies, and libraries) -- and in a variety of formats. People usually do not rely exclusively on one provider but use several in combination (Chen and Hernon, 1982). This report will focus on only one provider, the Federal government, although other relationships will be noted as appropriate.

Stakeholders in the information sector are individuals, organizations, and agencies whose mission is directly related to the production, collection, organization, enhancement, or dissemination of information. Typically these stakeholders attempt to influence those decisions in which they might have a vested interest. Stakeholders can be categorized as: for-profit or not-for-profit, Federal or non-Federal, having an interest in a type of information (public or other), etc. This report is concerned primarily with those stakeholders whose missions include *public* information-related activities.

Typology of Producers and Disseminators of Public Information

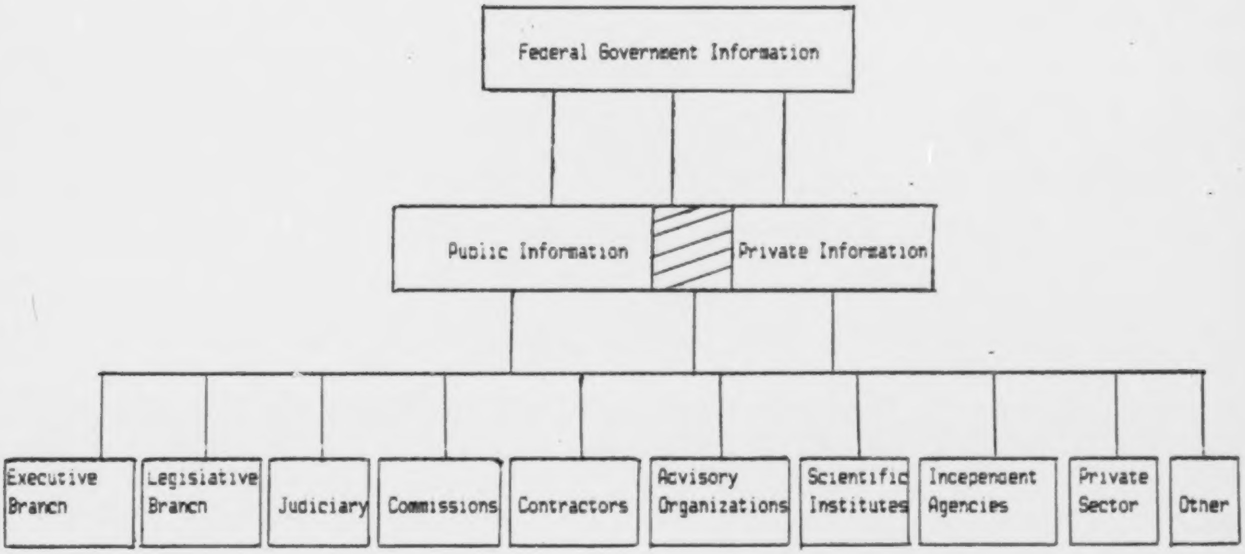
Producers

Almost all Federal agencies generate public information (see Figure 1-2). In addition, the GPO alone contracts out about 73 percent of its work to more than 8,000 private sector firms (Struck, 1984). Public information can appear in a diversity of formats and can be used to meet numerous information needs. The complexity of the Government as a producer of public information is not fully depicted in Figure 1-2.

The production of public information is not limited to the three branches of Government and the independent and regulatory agencies. Producers also include Government advisory organizations and other stakeholders in the information sector. As noted in Chapter 3 and the discussion of the waiver exemptions to Title 44 (sections 501 and 504), *United States Code*, Federal agencies receiving permission from the JCP may contract publishing to regional printing plants, contractors, and others,

FIGURE 1-2

PRODUCERS OF PUBLIC INFORMATION


Federal Government Information
Public Information
Private Information
Executive Branch
Legislative Branch
Judiciary
Commissions
Contractors
Advisory Organizations
Scientific Institutes
Independent Agencies
Private Sector
Other

or they may have their own printing plants. Indeed, the information environment is highly decentralized, lacks coordination, and does not eliminate duplication of efforts.

The increased availability of microcomputers and the use of software for word processing results in the production of additional information, much of which could be regarded as public. While the Paperwork Reduction Act (see Chapter 3 for a detailed discussion) may be reducing some record keeping and the amount of paper generated, the volume of public information produced annually is still quite sizable. This information is _availaible_, but it has limited accessibility because it is not actively disseminated. In order to gain access, the public must first be aware that the information exists, which agency produces or disseminates it, and then know what steps must be followed to gain physical access to the information.

Consider, for example, that some 3,000 Government machine-readable data files are available (_The Federal Data Base Finder_, 1984):

- directly from Government agencies (e.g., the Bureau of the Census) on magnetic tape or disk
- for sale or lease (e.g., from the National Technical Information Service, the Department of Agriculture, and the Bureau of the Census)
- directly through free online access (e.g., patent searches performed at patent depository libraries)
- directly through fee-based online access (e.g., the National Library of Medicine)
- directly through the commercial sector (e..g, Lockheed's DIALOG, BRS, ORBIT, LEXIS, and Westlaw) or the quasi-public or non-profit sectors (e.g., OCLC)

In addition, the Government might sell electronic photocomposition tapes, e.g., the Government Printing Office offers tapes to the Federal Register (Congress, 1984, pp. 16-17).

Some departments and regulatory agencies maintain reading rooms containing resources which the public can inspect but which are not widely distributed. Some of these reading rooms are located only in Washington D.C., while others are located in other parts of the United States. Area reading rooms have information pertinent to the locality; this information may not be available from other providers or in other formats.

Disseminators

Overview

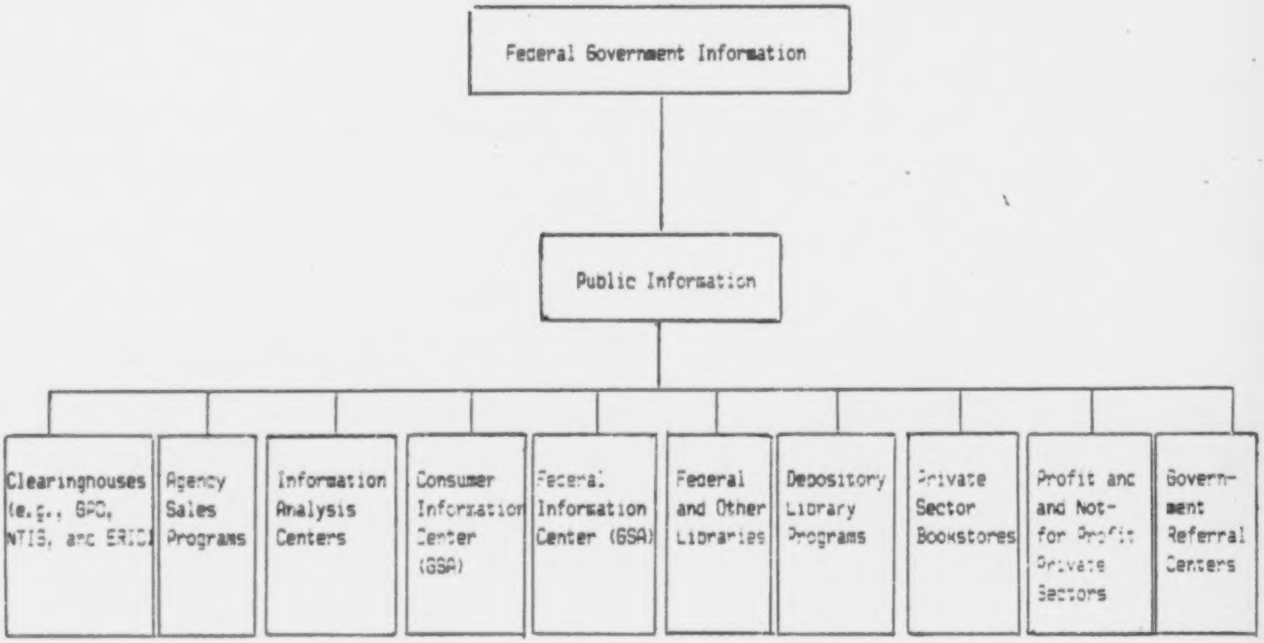
Federal agencies may engage in dissemination activities because their mission stipulates such responsibilities, because they want to be responsive to public demand, or because they recognize the benefits of subsidizing information products or services. Some agencies may be asked to collect and disseminate certain information and they will do so if they perceive it as part of their mission. The final decision about whether to disseminate public information may well rest on the cost of providing the service. It might be noted that the Federal Communications Commission (FCC) sells machine-readable data files for more than the cost of reproduction. The FCC then uses the revenue to defray the cost of compiling the information. Key issues relating to become "What is proper for an agency to do," "What charge should be levied," and "What should the agency contract, lease, or subsidize to other stakeholders in the information sector?"

A depiction of the structure of the Federal government as a public information disseminator is also complex (see Figure 1-3) and difficult to highlight briefly. Nonetheless, certain observations are in order. First, not all Federal producers of public information serve as disseminators. Second, dissemination of public information has been curtailed by the implementation of the Paperwork Reduction Act, and as a result of specific directives from the Office of Management and Budget (see Chapter 3 for a discussion of these), recommendations from the Grace Commission, the extent and nature of agency budget cuts under the Reagan administration, and the desire of Members of Congress to control expenditures and Government publishing. OMB claims that Federal publishing programs have been reduced by approximately one-third and that activities resulting in the elimination, consolidation, and cost reduction (e.g., lowering the production cost by reducing the number of copies printed and the frequency of issuance, or switching to publication in a microformat) of periodicals have led to the demise of 12,217 periodicals (Hernon and McClure, 1984). Some Members of Congress no longer intercede on behalf of their constituents to obtain free government publications from the Executive Branch.

Congressional committees are attempting to monitor and reduce the publication of duplicative information (Hernon and McClure, 1984), while more Executive Branch agencies are distributing fewer publications gratis. The Department of Agriculture and other parts of the Executive Branch have reevaluated the extent of their involvement with the Consumer

FIGURE 1-3

DISSEMINATORS OF PUBLIC INFORMATION


Federal Government Information
Public Information
Clearinghouses (e.g., GPO, NTIS, and ERIC)
Agency Sales Programs
Information Analysis Centers
Consumer Information Center (GSA)
Federal Information Center (GSA)
Federal and Other Libraries
Depository Library Programs
Private Sector Bookstores
Profit and and Not-for Profit Private Sectors
Government Referral Centers

Information Center. Located in Pueblo, Colorado, the Center comprises one means by which the General Services Administration, in cooperation with the GPO, has distributed free and inexpensive pamphlets to increase public awareness of consumer information issued by Federal agencies (Ibid.; Public Citizen's Open Government, 1984c).

Information analysis centers acquire, evaluate, repackage, and disseminate information related to a particular subject or goal. Some of these deal with public information, while others do not. Regardless, a number have ceased to exist or have been consolidated. At the same time, a number of public affairs, consumer affairs, inter-governmental affairs, and congressional affairs offices have had their staff and budgets curtailed. In the case of the Office of Consumer Affairs, Department of Energy, the scope and impact of its information activities have been sharply reduced.

The General Services Administration (GSA) operates a series of Federal Information Centers (FICs), which place the public in contact with the appropriate Federal agency, and answer general information queries. In 1983, the GSA reviewed the program seeking to make it more efficient and to reduce operating costs. As a result, FIC services were consolidated into twenty centers serving extended geographic areas via toll-free telephone systems. In a few locations (e.g., Tucson, Arizona) where "the cost-customer-use ratio is unsupportably high," toll-free service was discontinued. The GSA claims that "in no case where a toll-free line has been discontinued, does the cost for a three-minute commercial phone call exceed one dollar" (Knenlein, 1983).

The Federal government is letting more contracts with other members of the information sector for the production and dissemination of public information. Federal agencies are initiating or increasing user fees for access to public information, reducing the amount of information collected and published, releasing more information in machine-readable files and microform, and attempting to have more information withheld from public scrutiny. Due to staffing and financial considerations, some agencies are experiencing problems in making machine-readable data public on a wide scale. Therefore, they are providing other members of the information sector with copies for release to the public. The University of Georgia, Athens, for example, releases software programs for analyzing NASA's Landstat data (Congress, 1984, p. 124).

In March 1984, the Patent and Trademark Office concluded an agreement with private companies for the automation of its agency records. The contract stipulates that the automation will be done at no cost to the Government and that the agency will deny all Freedom of Information Act (FOIA) requests for records in automated form (Schuman, 1984, p. 57). As another example,

> the Securities and Exchange Commission has issued a Request for Proposal (RFP) for a pilot test of an electronic filing, processing, and dissemination system for the multiple disclosure forms publicly held companies are required by law to file. These forms are some of the Government's most highly sought after public documents, heavily used by investment houses. The SEC says that the company chosen to run the system will be required to make some "basic information" available to individuals at low cost; but still unresolved is whether the contractor will be allowed to offer far more lucrative, specialized services to brokerage houses and large companies (Ibid.).

Such decisions undoubtedly will intensify the efforts of public action groups and others to reverse the trend and to sound the alarm about the implications of such decisions.

Both the Executive and Legislative branches have been concerned about the control of transnational data transmission and open scientific communication. As shown by Relyea, "during the past few years, efforts have been underway to increase national security controls on scientific communication" These controls "severely curtail U.S. scientific achievement and progress, with consequential harm to the intellectual and economic, as well as military security of the nation" (1984, p. 177). At the same time, the Department of Defense has placed restrictions on non-classified research reports which it considers sensitive.

The Reagan administration tends to support industry concerns about the release of "trade secrets" information used in the regulation of public access to environmental, health, and safety information generated and held within the private sector. As a consequence, less information on the content and health effects of pesticides, workplace chemicals, and hazardous wastes is reaching the public.

The Federal Statistical Directory was published by the Office of Federal Statistical Policy and Standards, Department of Commerce, until that Office was transferred to the Office of Management and Budget and the title was labeled unnecessary and discontinued. With the 1984 edition, the directory is published commercially but at three times the previous price! Numerous examples of publications and services which have been consolidated or discontinued can be found in a series of pamphlets issued by the Public Citizen's Open Government Project (1984a, b, and c).

Before concluding this section, it might be helpful to highlight briefly selected dissemination activities of four other Federal departments and agencies: the Bureau of the Census, the Government Printing Office (GPO), the National Technical Information Service (NTIS), and the Department of Agriculture.

Bureau of the Census

The Bureau of the Census became an active disseminator of its products with the 1970 Census of Population and Housing. Users of 1980 census data may prefer the machine-readable form for certain reasons:

- the need to work with large amounts of data. Extensive calculations, sorting, and reformating can be done more efficiently by computer
- the desire to use computerized statistical packages or graphic display systems to which the data must be input in machine-readable form
- timing -- machine-readable data are usually available a few weeks or even months before the related printed reports
- the need for data not available in reports or microfiche, but derivable from machine-readable data files produced by the Bureau. Because of the high cost of publications, the Bureau can afford to print only a fraction of the data which are made available on tape
- computer tapes have expanded detail, with more subject data than the equivalent printed reports (Dukakis and Cohen, 1984, p. 126).

The Bureau has released a generalized file processing and tabulating package, CENSPAC, for users who do not want

responsibility for computer programming (Ibid., pp. 136-137).
of the programming details to

The Bureau maintains regional offices, which provide reference and other services. Other means of dissemination include displays at conventions, the conducting of special workshops and seminars, publication of articles in scholarly and professional journals, speeches and addresses by Bureau staff, the preparation of a slide presentation on the decennial census, the preparation of handouts and the distribution of agency newsletters and catalogs, the preparation of textbooks and other aids for use in college classrooms, etc.

In 1978, the Bureau of the Census began its state data center program for dissemination of data from the 1980 Census of Population and Housing. Now all states, except Wyoming, operate data centers, which receive census products and maintain a network of affiliates throughout the state. Many of these centers have centralized data resources and provide services useful to state and local governments as well as busineses, scholars, and other segments of the population (Riche, 1984).

Government Printing Office

The GPO can grant a 25 percent discount from the list price of sales publications to individuals and libraries which purchase at least 100 copies of a single publication sent to one address. Book dealers can receive the same discount regardless of the quantity ordered, but they would require at least a 40 percent discount, similar to that provided by commercial publishers. GPO officials have explored the option of changing section 1708, Title 44, United States Code, to make the discount more competitive. Still, the GPO persuaded B. Dalton and Walden Books to carry government publications on a selective basis, even with the 25 percent discount. In some cases, bookstores are permitted to add a small handling charge onto the sales price. The GPO has also "signed up about 200 book dealers to sell publications door-to-door for a commission" (Struck, 1984).

As Public Printer, Danford L. Sawyer, Jr., believed that the GPO was inefficient and should be operated as a private publishing firm. He created a marketing department, launched a high profile marketing program, issued a catalog of sales publications, substantially raised the prices of sales publications, and sold off 7,000 back titles as waste paper. The criterion for inclusion of a title in the sales program became its sales potential -- "cut out the losers and accentuate the winners."

In 1982, Sawyer directed the Documents Pricing Task Force, comprised on GPO officials, to investigate a new pricing formula and to make recommendations "which would make government publications available to the public by the most efficient and least costly means possbile under existing law." He also directed the Superintendent of Documents to reduce the number of titles in the sales program and to sell only those titles which would generate at least $1,000 annually.

Since Sawyer's departure as Public Printer in 1983, the policy that a title must have a sales potential of at least $1,000 has been relaxed. The GPO works with Federal agencies to obtain copies of those publications which the agencies believe should be in the sales program but will not have significant sales potential. Since 1978 (and the implementation of the 1977 Appropriations Act), the sales program is required to be be self-sustaining; the Congressional Record, certain publications from the Office of the Federal Register (e.g., the Federal Register), and publications for which an agency acts as a consigned agent comprise the exceptions to the self-sustaining mandate.

The pricing of a title by the GPO is based on cost plus 50% (see chapter 3). This requirement assumes that editorial and manufacturing costs as well as the sales potential can be precisely determined. It has been shown that:

> although the mission of the General Sales program is to make available those Government publications for which there is a demand, GPO does not currently conduct marketing studies to determine that demand. Marketing studies are often used by other publishers to determine which publications will have a demand and for establishing prices and quantities to be printed. Without such studies, publishing decisions are "guess estimates" at best (General Accounting Office, 1983a, p. 19).

The task force on the pricing of sales publications, which the Public Printer established in 1982, completed its investigation and offered specific recommendations which were adopted in the fall of 1983. The section in Appendix 3-1, for 1983, highlights these recommendations. Further, an excellent analysis of the pricing formula can be found in the General Accounting Office's analysis of the GPO sales program (1983a).

The GPO has been modernizing its business and management practices, as well as printing capabilities. Some critics that the placing of the GPO on "a sounder financial footing" has forced the agency "to raise prices for some government information to levels that many people can't afford" (Struck, 1984). Some Federal agencies have questioned the effectiveness and efficiency of GPO printing and would prefer to establish their own printing plants or to contract their printing to the private sector. For example, NASA is now attempting to bypass the JCP and GPO and contract its _Technical Notes_, arguing that this title is intended as a means of communication within Government, rather than outside ("Print Deal Seen Making GPO A Paperless Tiger," 1984). If NASA is successful, the process of publication and and dissemination of public information will become further decentralized. Further, the Superintendent of Documents will be unable to monitor the Federal printing environment, select titles for inclusion in the sales program, and make titles available for depository distribution.

Depository libraries, as of Fall 1984 number 1,391, provide a mechanism for the distribution of GPO publications in paper copy or microfiche. At present, the GPO does not distribute publications in other formats. However, most depository libraries are highly selective in the number and types of public information which they select and retain. Although more than 5,500 items are available for depository distribution, the 200th most frequently selected item is taken only by 60 percent of the depository libraries. This means that the vast array of items go unselected or are selected by few of the 1,391 depositories (Hernon and Purcell, 1982). It would seem, therefore, as more material becomes available for distribution, depository libraries will become even more selective in their acquisitions because they lack the space, facilities, and staff to absorb and service all the titles distributed annually.

Both the GPO and NTIS operate bookstore programs. The GPO bookstores are located throughout the nation, while the NTIS bookstore is located in the District of Columbia. Under Danford L. Sawyer, Jr., as Public Printer, an attempt was made to eliminate the GPO bookstore program as duplicative of the Washington based sales program, not cost-effective, receiving limited use, and largely a political program. The Public Printer's recommendation was overruled by the Joint Committee on Printing, and the General Accounting Office was asked to examine the sales program. A subsequent GAO report found the bookstores financially viable and indicated that they "offer personal attention, opportunity for inspection of documents for sale, and immediate delivery of purchases" (General Accounting Office, 1983a, p. ii). The report also outlined specific recommendations for improving the management and service potential of the bookstores.

National Technical Information Service

Both the Detroit and St. Louis public libraries serve as part of an NTIS experiment to enhance the dissemination of its publications and:

> NTIS sees the arrangement with the DPL as facilitating "the transfer to the private sector of Government-sponsored research and development results, good relations with the library community, and greater public awareness of NTIS as a source of business, statistical, and problem-solving technology information ("Detroit Public to Sell NTIS Documents to Public," 1984).

Both libraries can place orders directly with NTIS on behalf of their users and encourage the use of NTIS products and services. The effectiveness of the program has not yet been evaluated. To what extent does the public use libraries and their collections of Government distributed information to resolve their information needs?

NTIS has been criticized for acquiring and disseminating only a partial number of the technical reports produced by Federal agencies (Purcell, 1981). The pricing policy of NTIS has also been subject to criticism. However, Title 15, the _United States Code_ (see Chapter 3), mandates that NTIS maintain a self-sustaining operation. Since NTIS serves special constituent groups and provides specialized products and services, its pricing policies differ significantly from those of the GPO.

The legislative mandate of NTIS is to be self-sustaining, to a far greater degree than other Federal disseminators of public information. Further, the clearinghouse is charged with serving special segments of the population. Therefore, NTIS does not have to provide the same type of access and dissemination services to all potential user segments.

Department of Agriculture

The Department of Agriculture is developing a consolidated information dissemination system whereby it will contract the dissemination of some of its public information to an outside firm. The emphasis of this contract will be on "perishable" data, or data with a limited lifespan, e.g., press releases. The Department will collect the data and turn it over to the agent, which will store it, provide the necessary software for data use, and update the "menu" as necessary. Three central questions relate to:

- at what point in a system may different users with different needs gain access to desired information?
- how can equality of dissemination between different users in both the public and private sectors be provided?
- how will the information be priced? ("Information Needs for Modern Agriculture," 1983, p. 8)

The Department will have "to determine to what extent and by what guidelines governmentally collected data" can "be accessed by private vendors" (Chartrand and Seidner, 1984, p. 2).

The Department of Agriculture supports a County Extension Service, which provides educational programs to the public, assists them in meeting specific information needs, and encourages people to help themselves. A case study of the effectiveness of the Service can be found in Chen and Hernon (1982).

Summary

The examples discussed abouve illustrate that the environment of Government dissemination of public information is equally as decentralized as the Government's role as a producer of public information. Policy directives emanating from OMB on information policy and information resource management (see Chapter 3) as well as the diverse mission of agencies such as the National Telecommunications and Information Administration and the Joint Committee of Printing underscore the complexity of developing national information policies and challenge the view of one all-encompassing national information policy. There are obviously various information policies for which coordination is necessary, and dissemination policies comprise a part of national information policies.

The Government should devote even more attention to the role of information handling technologies and ensuring that all segments of society have access to the types of public information which aid in their problem solving. A central question relates "To what extent should the development and enforcement of general information policies be entrusted solely or largely to agencies charged with overseeing specific pieces of information legislation/regulations or concerned largely or exclusively with issues specifically related to the economics of information?" Some crucial dissemination issues which should be given prompt attention are:

- the pricing of information
- the purposes and uses of information
- the completeness and accuracy of information
- amount of duplication in information content
- the packaging and marketing of information
- the maintenance of active dissemination means so that the Government accepts a much broader role than merely making its information available
- the types and formats of public information, and the implications of these decisions to use
- the accuracy and quality of service provided by information disseminators
- the amount of time it takes users to explore the information environment to discover needed information.

These eight issues can be regrouped into three broad categories: (1) what public information to disseminate, (2) how to disseminate it, and (3) at what price?

Information technologies may assure wider access to types of public information and the receipt of this information in a timely manner. However, the type of policy issues identified in Chapter 4 must be addressed. For example, Figure 4-4 discusses access to public information and the concept of a safety net, which guarantees "equal opportunity" to access public information.

Functions of Public Information

Merritt (1943), who examined public information in the context of a printed publication, identified the major functions, purposes, or uses of public information as follows:

- _Legislative_ publications of Congress (e.g., congressional bills, committee hearings and reports, and public laws) advance the legislative process
- _Administrative_ publications (e.g., the _Federal Register_, the _Code of Federal Regulations_, and the _Calendars of the United States House of Representatives and History of Legislation_) assist in public administration
- _Reportorial_ publications (e.g, annual reports of Government agencies, decisions rendered by the courts, and briefs and opinions of the Attorney General) report a completed task or activity, or progress on the completion of an ongoing action
- _Service_ publications are concerned with the lives, activities, and welfare of the citizenry. In this category can be placed much of the data collection by the Bureau of Labor Statistics and the Bureau of the Census
- _Research_ publications convey research conducted or supported by a Government agency

- Informational publications (e.g., pamphlets on welfare, social security,and health care) inform the public about the nature and activities of Government agencies. They are intended to educate the public and provide people with information useful for decision making

Merritt analyzed the publications reported in the Monthly Catalog on the basis of the purpose for which they were issued. While his findings are too dated to report here, Richardson (1982) has extended the original analysis to more recent years. Using the Monthly Catalog for 1980, he combined reportorial, information, and service functions into one category. By doing this, he discovered that this combined category accounted for the largest percentage of publications (82.2) identified and indexed by the GPO. In addition, by making comparisons to the Merritt study, he was able to demonstrate that the research function, as reported in this one index, has "grown significantly in the last 40 years" (p. 227).

Merritt's six broad groupings suggest various types of public information sources. However, some types result in substantially more publication than others. For example, the research function which Merritt identified has become increasingly more important. The Government is now a large, if not the largest, producer of research publications and the amount of publication has grown dramatically since World War II.

Types of Public Information

The Federal government touches all aspects of our daily lives. It issues publications and other source material to convey information, or to inform the public. This source material comprises a means of communication between the Government and its citizenry. The three branches of Government also generate unpublished records which complement published sources and document the administrative, leadership, political, personal, and other activities of the Government. These records (e.g., internal agency memoranda, letters, and working papers) comprise a specialized type of public information -- one which may fall into the gray area between public and private information. Therefore, they will not be highlighted here.

Rips (1965) identified seventeen basic types of public information sources that enable the Federal government to accomplish the functions which Merrit identified. Hernon and McClure (1984) expanded upon her typology and discussed eighteen types. The analysis reported here represents an extension of that work by rearranging certain groupings and identifying twenty-two types. These are:

- Administrative reports
- Committee and commission reports
- Research reports and developmental studies
- Statistics
- General information pamphlets and fact sheets
- Periodicals
- Press releases and other ephemera
- Directories
- Handbooks, manuals, and digests
- Bibliographies, lists, guides, and catalogs
- Decisions and opinions

- Rules, regulations, directives, and circulars
- Maps, Charts, and Photographs
- Audiovisual resources
- Bills and resolutions
- Hearings
- Journals and proceedings
- Laws and statutes
- Treaty sources
- Technical report literature
- Patents
- Technical documentation (codebooks and other documentation which accompany machine-readable data files)

Figure 1-4 suggests the branches of Government primarily responsible for issuing each type of public information, while Appendix 1-1 elaborates on each type. Except for patents and technical documentation, a type of public information is not produced by only one branch of Government. Another observation is that the Judicial Branch produces the fewest number of information types.

A typology of public information types may serve as a reminder of the diversity of publication emanating from the Federal government. The typology does not provide a useful basis from which to examine users and uses of public information. It is more important to match information content to information needs, and not information types or formats to types of users.

Formats of Public Information

FIGURE 1-4

BRANCH OF THE FEDERAL GOVERNMENT ISSUING EACH TYPE OF PUBLIC INFORMATION SOURCE

EXECUTIVE	LEGISLATIVE	JUDICIAL
Administrative Reports	Administrative Reports	Administrative Reports
Committee and Commission Reports	Committee and Commission Reports	
Research Reports and Development Studies	Research Reports and Development Studies	
Statistical Data	Statistical Data	Statistical Data
General Information Pamphlets and Fact Sheets	General Information Pamphlets and Fact Sheets	General Information Pamphlets and Fact Sheets
Periodicals	Periodicals	Periodicals
Press Releases and Ephemera	Press Releases and Ephemera	
Directories	Directories	Directories
Handbooks, Manuals, and Digests	Handbooks, Manuals, and Digests	
Bibliographies, Lists Guides, and Catalogs	Bibliographies, Lists, Guides, and Catalogs	
Decisions and Opinions	Decisions and Opinions	Decisions and Opinions
Rules, Regulations, Circulars, and Directives	Rules, Regulations, Circulars, and Directives	Rules, Regulations, Circulars, and Directives
Maps, Charts, and Photographs	Maps, Charts, and Photographs	
Audiovisual Resources	Audiovisual Resources	

FIGURE 1-4

(Continued)

EXECUTIVE	LEGISLATIVE	JUDICIAL
Hearings	Hearings	
Journals and Proceedings	Journals and Proceedings	
Laws and Statutes	Laws and Statutes	
Treaty Sources	Treaty Sources	
Technical Reports	Technical Reports	
Patents		
Technical Documentation		

The twenty-two types of public information sources appear in a diversity of formats, many of which take advantage of technological applications. Examples of different formats include:

- paper
- microform (microfiche and microfilm)
- audiovisual (slides, flimstrips, sound recordings, motion pictures, videotape, etc.)
- machine-readable (bibliographic, statistical and numeric, textual, properties, and full-text data files)
- optical disks
- electronic (videotext, viewdata, etc.)

Of the formats discussed in this section, paper copy reaches the widest range of the general public, while microfiche, as shown in Table 1-1, has become the preferred format by which the GPO distributes public information to its depository libraries. In a six year period, over 350,000 titles have been distributed; these titles accounted for more than 137 million copies! During the same period, 41.7% of all titles distributed were in microfiche, rather than paper, format. This percentage, however, is misleading; with the years 1982 and 1983, microfiche became the major format for depository distribution.

The full impact from the Paperwork Reduction Act of 1980, the April 1981 moratorium on the issuance of new periodicals and selected other formats (see Chapter 3), and subsequent directives issued by the Office of Management and Budget (e.g., Bulletin No. 81-16 and Memorandum 81-14) remains to be determined. The number of paper titles distributed to depository

TABLE 1-1

NUMBER OF PUBLICATIONS DISTRIBUTED TO DEPOSITORY LIBRARIES BY FISCAL YEAR*

	Paper Copy		Microfiche		Total**	
Year	titles	copies	titles	copies	titles	copies
1978	32,142	12,928,901	4,045	1,544,755	36,187	14,473,656
1979	69,878	19,580,302	16,553	7,473,049	86,431	27,053,351
1980	34,234	9,395,283	24,438	10,651,385	58,672	20,046,668
1981	37,385	11,923,321	27,993	12,820,265	65,378	24,743,586
1982	15,849	7,023,392	27,974	13,686,010	43,823	20,709,402
1983	18,292	8,553,839	43,850	21,748,730	62,142	30,302,569
TOTAL:	207,780	69,405,038	144,853	67,924,194	352,633	137,329,232

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*The following data are derived from Administrative Notes (Washington, D.C.: GPO), 4, number 16 (October 1983): 3.

**In some instances, the same work may be available in a dual format. Therefore, the totals represent an inflated estimation of the number of unique titles produced and distributed.

libraries may remain substantial and well exceed that produced by the entire American book publishing trade (Hernon, McClure, and Purcell, forthcoming). However, paper copy distribution will give way to other formats -- ones more economical to produce and distribute.

A number of specific options are available for each of the formats. For example, microfiche is available at different reduction ratios, including 19x, 22x, 48x, and 98x, and microfilm is generally issued at 16 and 32mm. Given the diversity of options, there is a clear need for the adoption of, and adherence to, standards such as the ANSI Standard for Information on Microfiche Headers (Z39.33). These standards should apply to the creation, production, and dissemination of microform products.

Audiovisual resources can be classified as both a type and format. For a society which meets a large number of its information needs through interpersonal communication and which is so closely tied to visual communication, audiovisual resources comprise a format for informing, educating, and entertaining the public. However, of the formats discussed here, the fewest number of types of public information are available in this format. The Congressional Research Service does prepare audio cassettes of its _Issue Briefs_. Beginning in February 1982 the floor proceedings of the House of Representatives are telecast on a cable system.

"Machine-readable files" is an umbrella term, encompassing a diversity of options. These files provide factual information or bibliographic citations and perhaps abstracts of the sources listed. They may also permit searching of patent files or the gathering and manipulation of statistical data. The Bureau of the Census, through its decennial Census of Population and Housing offers summary statistics (data from individual units of observation aggregated to a particular level; these are usually comparable to equivalent summary data on tables in published reports), microdata (unaggregated data which are individual records of persons, households, etc., with names and addresses removed), and geographical reference files (these files provide a link between census geographical areas and area names, street addresses, etc.). Other files are "textual-numeric," which signifies that the records contain fields of both numeric and textual data, or only one of the two types. Additional options might be "properties" data bases, which convey dictionary or handbook type of data, or "full-text" data bases, which offer both bibliographic references and the complete text of the source.

Some data files merely duplicate paper sources. The advantage of these files is that the data they display can be manipulated and compared. Other files contain more data than are available in published reports, or have no paper equivalent. Numerous examples of individual data files and the Federal agencies which produce or distribute them can be found in Chen and Hernon (1984). For example, the Geological Survey offers statistical data bases or information systems for geographic, geologic, hydrologic, and cartographic data. These are available in a variety of formats: tapes, computer output microfilm, or special computer queries of a data base. The National Mapping Program offers digital cartographic and geographic data.

A number of Government data bases can be accessed from the agency itself, agency contractors or clearinghouses, commercial vendors, or libraries. It is possible for individuals with home computers linked to telephone lines to use Federal data bases related to alternative fuels, the climate, crude oil, and time (e.g., the time of sunset and sunrise). The use of some data bases does not involve a charge, while for others the cost covers just the search time and for still others the search time plus additional charges.

The proliferation of microcomputers is enabling Federal agencies to produce public information on diskette, to revise documentation without having to generate paper copies, and to distribute disks rather than paper or microform copies. Archivists and historians are already expressing their concern about the availability of only the final copy and the destruction of working files. They are encouraging the preservation of intermediate files to document the formulation of policy and actual decision making processes.

Videotext is the display of textual information, both words and numbers, on a video screen. Typically it implies a two-way system whereby viewers request information from a potentially larger collection of data. Other technologies come under the generic heading of "viewdata," the transmission of electronic pages and graphics over telephone lines, cable television lines, or broadcast television to either microcomputers or modified television receivers. The State Department, the Internal Revenue

Service, the Department of Agriculture, and the National Oceanic and Atmospheric Administration (among others) have been, or are, involved in teletext and/or videotext projects (Schweizer, 1983).

Green Thumb, an experimental videotext project funded by the Department of Agriculture and the National Weather Service, was tested in Kentucky from March 1980 to July 1981. Two hundred participants could connect electronically to County Extension offices through their home television sets and telephone lines. Marketing and weather information were the most frequently requested types. Nonetheless, many of the farmers encountered technical problems with the use of the system and still relied heavily on newspapers and radio broadcasts (Case, 1981). Information technology in the future will have the capacity to meet a greater diversity of information needs. However, the information provided or used may not be supplied directly by the Government. Instead, it may be furnished by other members of the information sector, perhaps with a Federal subsidy.

The availability of information via information handling technologies, such as microfiche and machine-readable data files, may comprise a barrier to use and, therefore, information access. For example, academic faculty members may not want to take the time to read an entire document in a library or other institutional provider. Instead, they may prefer to check out the document or to xerox sections of it. Availaiblity in a microformat complicates convenience of use unless high quality reproduction equipment is available or the library circulates high quality portable readers. At present, few academic departments or individual faculty members have their own portable readers. The issue of social scientist receptivity, or lack thereof, to a microformat has been discussed elsewhere (Hernon, 1982). Suffice to say, a microformat inhibits browsing, and the quality of the film product depends on that of the original. Further, a microformat may not always be legible.

"Although machine-readable data files are important and valuable for researchers, policy-makers and administrators, they are vastly under-utilized" (Heim, 1983, pp. 58-59). A possible explanation is that they are often not well publicized, frequently do not conform to a set of standards. They require technical expertise and financial and computer resources to perform analysis and information retrieval. Additional factors inhibiting access are that data files are generally housed separately from other formats of information. Typically Government agencies and other producers of data files emphasize their creation and maintenance, rather than their dissemination. Consequently people must often know that the files exist and be willing to expend the time necessary to learn how to access the needed information.

Figure 1-5 illustrates that the greatest number of types of public information sources are available in either paper copy or microform. As a generalization, it can be suggested that the more specialized formats have greater appeal to specific segments of the population. For example, the numeric data bases of the Bureau of the Census covering the decennial census of Population and Housing appeal to Government (Federal, state, regional, and local) officials, planners, social scientists, persons in

FIGURE 1-5

FORMATS IN WHICH TYPES OF PUBLIC
INFORMATION ARE DISTRIBUTED

	Types								
Formats	Administrative Reports	Committee and Commission Reports	Research Reports; Development Studies	Statistics	General Information Pamphlets	Periodicals	Press Releases and Other Ephemera	Directories	Handbooks, Manuals, and Digests
Paper	X	X	X	X	X	X	X	X	X
Microform	X	X	X	X		X		X	X
Audio and Visual									
Machine-Readable	X			X			X	X	X
Electronic	X		X	X		X	X	X	X

FIGURE 1-5

(Continued)

	Types								
Format	Bibliographies, Lists, Guides, and Catalogs	Decisions and Opinions	Rules, Regulations, Directives, and Circulars	Maps, Charts, and Photographs	Audiovisual Resources	Bills and Resolutions	Hearings	Journals and Proceedings	Laws and Statutes
Paper	X	X	X	X		X	X	X	X
Microform	X		X	X		X	X	X	
Audio and Visual					X				
Machine-Readable	X		X	X		X			
Electronic	X		X	X		X			

Figure 1-5

(Continued)

Types

Format	Treaty Sources	Technical Report Literature	Patents	Technical Documentation
Paper	X	X	X	X
Microform		X	X	
Audio and Visual				
Machine-Readable				X
Electronic				

business and industry, etc. The general public may be satisfied with the coverage given in Statistical Abstract of the United States and other basic reference aids produced by the Bureau; however, this is untested conjecture. Further, there is a need to determine the context in which people seek one type and format of public information source over another.

Current and Prospective Means for Disseminating Public Information

Figure 1-6 highlights selected methods by which public information is disseminated in either an electronic or non-electronice format. Given present trends, in the foreseeable future, attention will be focused on electronic means. As more information is produced in electronic and machine-readable form, it is logical to assume that dissemination efforts will build from this foundation. Production and dissemination of public information and dissemination will undoubtedly emphasize machine-readable data bases for bibliographic references and textual-numeric, handbook-type, and full-text data.

The Federal government is also becoming more active in the use of videotext and teletext (Schweizer, 1983). At present, users of public information can purchase data disks from NTIS and the Bureau of the Census. The Library of Congress is exploring optical disk storage for preservation and catalog card distribution (Hahn, 1983). Electronic information systems are operated by the Patent and Trademark Office, the Security and

FIGURE 1-6

CURRENT METHODS FOR DISSEMINATING PUBLIC INFORMATION

Electronic	Non-electronic
the information itself	*print sources*
electroinc mail	mail, telephone, and in-person requests from Government
videotext	
teletext	
data files (machine-readable)	
microfiche	
bibliographic description	
bibliographic data files	
electronic mail	
online ordering	

Exchange Commission, the Department of Agriculture, the Bureau of the Census, and the Bureau of Labor Statistics. Seekers of public information can also engage in online ordering of source material from the GPO, NTIS, and other clearinghouses.

The question of whether public information in an electronic format increases or decreases public access raises an important issue. This information may not be regarded as a publication, as stipulated by Title 44, section 1901, of the United States Code, and as within the public domain. Further, licensing agreements between Executive agencies and private contractors may remove electronic information from public scrutiny and use. Current Government emphasis is apparently on the creation of information systems, with the implicit assumption that there is a safety net to protect or guarantee public access (see Chapter 4).

As more agencies make their data files available through other stakeholders in the information sector, dissemination efforts will continue to develop. However, dissemination activities may well target a few segments of society, and electronic dissemination may not extend to all segments of the public. The present emphasis on economy in Government underscores that more information will be available in electronic format and that the majority of the public may not have access to these electronic resources.

Figure 1-7 suggests that although the Government may improve its dissemination mechanisms and take full advantage of technology, there is no guarantee that the public will make greater use of the information available or the special services which are developed. Each of the factors identified in the

FIGURE 1-7

EXAMPLES OF DECISION FACTORS AFFECTING USE
OF PUBLIC INFORMATION

1. Does the person know that he/she needs public information to resolve an information need?

YES NO

Question Assumptions:

- the person specifically knows about public information and can distinguish this one form from others
- public information is unique and the same information cannot be found elsewhere

---

2. Which information provider will the person consult?

- Federal government itself
- Depository or other library
- Business or organization
- Professional association
- Friend, colleague, or neighbor
- Mass media
- etc.

Question Assumptions:

- users are most likely to consult "official" providers
- users want the most authoritative information
- users require detailed information
- users do not care if they receive printed information, oral information, etc.

FIGURE 1-7

(Continued)

3. Format in which public information appears is an insignificant factor affecting use.

Insignificant Significant

Question Assumptions:

- users are likely to use any format
- the information is easy to discover and use regardless of format
- users have access to the necessary equipment to read microfiche, electronic, or machine-readable information
- the cost in time and money is not a significant factor affecting use

---

4. Does the person have money to ascertain public information?

YES NO

Question Assumptions:

- for some information, the public should be expected to pay
- the information is "reasonably" priced
- those unable to pay can find similar information elsewhere or can wait for alternative information to appear

---

5. Does the person have adequate time to determine the procedures for gaining access to public information?

YES NO

Question Assumptions:

- the procedures are clearly articulated and consistent within and across agencies
- the information is assumed to be important and worthy of the wait
- the information is not quickly needed

FIGURE 1-7

(Continued)

6. Is there public information anywhere else which could resolve the information need?

YES NO

Question Assumptions:

- public information exists, can be located, and is present in a usable form
- the information is treated as public information and widely disseminated

---

figure have a number of underlying assumptions, all of which merit investigation. The figure itself makes one assumption: type of public information is not an important factor. People do not distinguish among types; rather format is a more critical issue. This figure underscores the importance of the next two sections of this chapter and the view that a better understanding of users and uses of public information is needed. Indeed, the research base on these two interrelated topics is limited.

Additional issues relate to whether information technology will lead to the demise of other formats of information and whether electronic dissemination will replace current methods of dissemination. If the Government provides public information only in an electronic format, and if other stakeholders in the information sector determine that there is a need for printed information (and that it is profitable), then these other stakeholders may fill the void. The public will have to decide how much it is willing or able to pay for information which is potentially useful for decision making.

Users of Public Information

Users of public information created, produced, and disseminated by the Federal government cut across all segments of American society and most age groups and nationalities. This information may also be useful to people in other countries. The identification of types of public information is of less importance than knowing:

- the context in which public information is needed (the information need)

- which providers are consulted and for what reasons
- preferred formats of public information
- the degree of sophistication in the reading level of public information and the public

Public information should not be "viewed as an amorphous entity" and the public "as a single group with one set of needs" (Culnan, 1984, pp. 23-24). There are many types of public information, formats in which this information is packaged, and possible user groups of this information.

Current and potential users of public information should be viewed as "market segments with varying needs for an array of information products and services" (Ibid., p. 24). However, preliminary to this, research must identify the information needs of the public requiring (or benefiting from) the use of public information, and the providers which they consult to resolve these needs. Appendix 1-2 offers a typology of general information gathering situations in which the public has found a need for information. Such a typology has been employed to investigate information gathering situations and to observe which providers are consulted, why, and to what extent information needs have been resolved.

Issues Related to Public Information Users and Users Meriting Investigation

Typologies of Public Information

Since typologies of public information depict the breadth of publication emanating from the Federal government, they should be developed and refined. Advancing technology may either expand or reduce the number of types and formats available. Electronic mail, at some point, might be considered as a type of public information. The message would be available to anyone with access to particular computer hardware or software systems. As this means of communications becomes interactive, it can meet a greater diversity of information needs and replace some types of public information, e.g., general information pamphlets.

Purpose of Publication

Given the efforts of the Reagan administration to control and reduce publication of certain types of public information (periodicals, pamphlets, and audiovisual products), information types and formats should be matched to the needs of specific information users. Then, publications can be compared to specific goals and objectives of the Federal agency, and issues of cost control can be compared to the social good. In 1984, two articles have raised an important theme -- the "privatization" of public information (Schnapper, 1984; Smith, 1984). Under the Reagan administration, information is regarded "as a commodity to be owned, bought, sold, and traded for political gain" (Smith, 1984, p. 276). The articles document the rapid growth of the private information sector and the pressues which it has placed on the Government to privatize public information. The curtailment of information generated by Federal contractors has been accompanied by Federal subsidizes of commercial publication arrangements and an willingness of some Federal agencies to grant their contractor-grantees "full title to their publicly funded products as an incentive to make them available under non-government auspices" (Schnapper, 1984, p. 211). Such trends merit careful monitoring and Government action, where necessary.

Pricing Policies

As noted in the GAO report on the GPO sales program, "information about the current public demand for Government publications is not adequately developed and used to influence selections" (General Accounting Office, 1983a, p. 16). Research could therefore be useful for the setting of prices and for targeting marketing efforts to particular segments of the population. Further, the pricing policies of Federal disseminators of public information should be analyzed for inconsistencies and soundness of criteria. Pricing should be set to recover costs while still balancing various goods, economic or otherwise. A key issue is "Which costs should be recovered -- those relating to compilation as well as production and dissemination?

Information Needs and Gathering Patterns

Some research related to uses of public information has already been conducted and could provide a framework from which users and uses of public information could be investigated. For example, a few Federal statistical gathering agencies have surveyed the information needs of user groups. The Economics and Statistics Service (ESS), in the late 1970s, contracted with the National Opinion Research Center (NORC) to study farm operators and their views of statistical and economic information, and their opinion of USDA surveys. The ESS has also studied the economic information needs of farmers and those needs which might be resolved from access to information technology. Apparently, farmers and ranchers need information related to:

- news and community service -- what's happening
- weather forecasts and related emergencies or disasters
- crop and livestock production
- marketing information, including current and future prices
- the selling of farm products through teleauction or computer auction
- the purchasing of farm and home supplies, including teleshopping
- banking services
- farm and public policy (e.g., Government regulations)
- personal education and entertainment

More than forty information technology systems relate to the information needs of farmers and are currently functioning, in either full operation or an experimental mode. These systems include "time-sharing information delivery, electronic trading, videotext programming, and electronic message switching" ("Information Needs for Modern Agriculture," 1983, p. 4).

In 1984, the Department of Agriculture initiated planning for the creation of "a central repository for consumer electronic retrieval of current information" (Chartrand and Seidner, 1984, p. 25). Farmers and ranchers can receive press releases electronically and have access to electronic mail, videotext systems, electronic trading, and time-sharing information delivery. Excellent examples of these uses can be found in Chartrand and Seidner (1984, pp. 28-34).

Some of the information needs of farmers and ranchers are met by the U.S. Department of Agriculture and the National Weather Service (Library of Congress, 1982). Similar studies should be conducted for other segments of the population in order to place the use of public information and Federal agencies in the context of the full range of information resources and providers. As the studies for the Department of Agriculture have demonstrated, the insights gained can be used to improve data collection techniques and documentation, and to meet the Government's dissemination responsibilities to the American public (Ibid.). Such studies might serve as a background to conferences and workshops in which a research agenda is developed and refined, and participants explore:

- the services of different stakeholders in the information sector
- government information services -- their marketing and management
- the goals and objectives of information services
- user group information needs
- the application of computer hardware and software to address information needs

A committee print, Information Technology for Agricultural America (Library of Congress, 1982), provides an appropriate model for the design and implementation of such conferences or workshops. This document discusses a symposium, sponsored by the Department of Agriculture, which had three specific objectives:

- to identify and discuss policy and program questions

> ... and obtain realistic recommendations for possible congressional (and other) initiatives
>
> - to increase public awareness of the potential benefits of ... information resources and services [derived from information handling technologies] ... for those involved in agriculture
>
> - to provide an opportunity for Members of Congress, their staffs, and activists in the public and private sectors to exchange ideas and become aware of "pilot" projects and operational programs affecting the farming and ranching communities ("Information Needs for Modern Agriculture," 1983, p. 2)

According to Chartrand and Seidner,

> emerging from the symposium came an assessment of the current situations concerning information needs for agriculture, and an outline of what is needed to ensure that modern agriculturalists have access to the types of information that will result in more optimal decisionmaking (1984, p. 44).

The replication of this symposium by other Federal agencies might also address additional objectives. Some might be to:

- ensure that the Federal agency maintains a dialogue with its constituent groups and other interested parties

- demonstrate that the Government is responsive to the information needs of the public

- develop information systems which meet user requirements

- identify topics requiring further investigation and to set a research agenda for the future. The agenda would address priorities of the Federal agency and be in conformity with appropriate statutory and administrative law. Agendas for the various Federal agencies could be coordinated and publicized so that the research does not become isolated but has the widest potential impact

- conduct "long-range studies which would attempt to delineate responsive information delivery and access systems (Library of Congress, 1982, p. 5)

Need to Expand the Research Base on Uses of Public Information

Research suggests that academic social scientists rely on a few types of source material, primarily periodicals and monographs. Depending on the particular discipline, one will be accorded higher importance than the other. Among the social scientists, economists are the most likely to consult public information; in fact, depending on the particular teaching and research specialty, public information may be more important than monographs.

Like other academic social scientists, economists do not use all types of government publications. Their use tends to concentrate on a few types, primarily statistical data and periodicals, issued by selected Government agencies (Hernon, 1979; Hernon and Purcell, 1982). The existing research base on the users and uses of public information is inadequate; additional studies might suggest strategies by which public information can become a more effective and efficient resource for resolving diverse information needs.

Barriers to Use of Public Information

At times, Government officials and others seem to be saying: "use our information because it is the most current, accurate, and authoritative," or "we can place even more information at your disposal." Yet, they may be unwilling to assist users in selecting specific items from the mass of available publication. This mass includes duplicative and superseded information, as well as material which is poorly written or has a reading level higher than that of the general population. Further, the Government may be unwilling to reformat information resources and to engage in user training.

Research should probe barriers to the use of public information. These barriers may include:

- public unawareness of the types of public information and their utility to specific information gathering situations
- the complexity of the process of obtaining public information
- the cost in time and money in obtaining public information
- dissatisfaction with an information type or format
- amount of duplication with other information resources
- the reading level and/or datedness of the information
- lack of familiarity with the Government and the complex information environment
- lack of an effective marketing techniques for public information
- lack of effective screening mechanism to eliminate duplicative and obsolete information
- complex file structures and lack of adequate documentation for machine-readable data
- inconsistencies in the content of available information
- online searching of bibliographic data bases may produce many titles not relevant to specific information needs. Therefore, users may have to examine the sources listed and select those most relevant

People often prefer "information which is familiar and which tends to be consistent with existing attitudes and beliefs" (Crecine and Brunner, 1972, p. 159). Figure 4-4 which summarizes the barriers to information gathering, suggests that the concept of a safety net for access to public information may be exceedingly difficult to achieve, without greater Federal intervention to simplify and expedite the process of information gathering.

Criteria by Which People Select Public Information

In addition to exploring barriers to information access, research should examine the criteria by which people select information. Given a particular information need, which is most important: accuracy, timeliness, understandability, or cost of the information? Perhaps none of these criteria are important or others might be more important.

Information technology may enable the public to be more effective and efficient consumers of information. One problem with conducting online bibliographic data base searches is that even with the development of the most exact search profile, many irrelevant, superficial, and redundant items may be identified. Therefore, research should explore methods for effectively and efficiently attacking the various barriers and determining the most appropriate criteria under different circumstances. There is a definite need for experimental studies having an evaluation or comparison component. In this way, dissemination mechanisms can be linked to actual information needs, and evaluation methodologies can ensure that people receive the public information which they need and want.

Ensuring the Reliability and Validity of Public Information

Morehead has written that "this is not to say that all information found between the covers of a government document is fatally flawed. It is to say that we are never sure that the information we may use achieves a comfortable degree of reliability." He suggests that librarians, and presumably other information professionals, should identify problems of data interpretation, point out pitfalls, and/or warn about the unreliability of statistical and other data (1982, pp. 70-71). The establishment of the reliability and internal validity of data is important for public information. Studies which address these specific issues are needed.

Unobtrusive Testing

In the social and behavioral sciences, there is a body of research called unobtrusive testing. Using this methodology, researchers have developed a set of pretested questions, similar to those which the public might ask, and have administered them to the staff of academic, public, and special libraries. It has been shown that library staff members are far less successful in answering factual and bibliographic questions than they had supposed. One study discovered that documents librarians from 17 institutions holding depository status in the Northeast and Southwest could only answer 37 percent of the test questions correctly. Further, they infrequently engaged in referral service (McClure and Hernon, 1983). Such studies merit replication but not exclusively in a library context. It would be useful to ascertain the performance rate of different producers and disseminators of public information. Studies might also make comparisons across providers and document the extent to which the public prefers to rely on interpersonal communication, informal networks, and an invisible college.

The User Perspective

It is important to know the users and uses of public information, as well as the role of information technology in improving the bibliographic control and physical access to this information. However, the most sophisticated information retrieval system could be in place but fail to meet its objectives, if it is poorly marketed and the personnel dispensing public information provide inaccurate, incomplete, and rude service.

As noted in one study,

> Tailoring information to target audiences requires detailed knowledge of their institutional environment and the way in which they typically use information. New advances in information technology may in principle improve the ability to communicate Government funded research, but in fact institutional barriers and human behavior considerations still predominate. Changing behavior must be a long-term goal, and Federal policies have often lacked the direction, support, and leadership necessary to maintain continuity. Improving the utility of collected information through better technology ... [etc.] is possible. However, the success of future efforts is likely to depend on the extent to which users themselves are involved in policy and system development instead of remaining the passive targets (Bikson, Quint, and Johnson, 1984, p. 75).

Clearly, there is a need to better understand the public information needs of user segments, their information preferences and gathering patterns, and the barriers which they encounter in gaining effective access to Government provided public information.

There may be a direct relationship between the policy decisions of the Administration and access to public information. The Government has not been sufficiently concerned with dissemination and the public access impacts resulting from the decisions made. Research can call attention to the problem and encourage the Government to redirect priorities. However, the Government must be willing to accept a wider responsibility, that of information dissemination. To meet this responsibility, the the Department of Agriculture has formulated an appropriate model -- one which identifies actual information needs, and the information gathering patterns of its public, as well as attempts to ensure that Departmental programs, services, and types and formats of public information are relevant to these needs. By engaging in these activities the Government communicates with the public and attempts to be responsive to the public's information needs.

Summary of Significant Policy Issues Addressed in the Chapter

Information policy is "a set of interrelated laws and policies concerned with the creation, production, collection, management, distribution and retrieval of information." These polcies "profoundly affect the manner in which an individual in a society, indeed a society itself, makes political, economic and social choices" (Mason, 1983, p. 93).

Some policy issues can be classified as: "(1) the freedom of the individual versus the good of the society as a whole and (2) private sector interests versus public sector responsibilities" (Ibid., p. 95). Much of this chapter has focused on the first issue and the relationship between the economic and social good. However, addressing the issue of the increased privatization of public information draws attention to the second policy area.

The development and administration of Federal information policy is hampered by the lack of a clear definition of public information. The definition guiding the JCP and GPO is contained in Title 44, but this definition applies only to that title and does not clarify the meaning of "informational matter" or "as a document." Executive agencies regard the existing definition as pertaining only to "traditional printing," while the JCP and GPO prefer a more expansive interpretation of printing.

The public has a right to gain access to information produced by the Government. However, the current emphasis on economy in Government is restricting the type and amount of public information produced and disseminated. What is produced may not be in an easily accesible format. Complicating matters even more is that decisions supposedly based on economy may, in fact, be political. Public access exists when all potential user segments of the public have an equal opportunity to obtain information.

Other policy issues addressed in this chapter relate to: (1) the effectiveness of the Federal government as a provider of timely and accurate information, (2) the lack of coherent, coordinated national information policies based on more than economy in Government, and (3) the role and responsibilities of various stakeholders in the information sector.

Since information policy issues are interrelated, they become even more difficult to resolve. For example, by encouraging a more limited definition of public information, various stakeholders in the information sector can more easily circumvent the provisions of Title 44. The issue of increased economy in Government provides an ideal opportunity for the Federal government to reduce the size and scope of its publishing programs and to offer increased production and dissemination opportunities to other stakeholders.

Figure 4-1, which provides an overview of national information policy issues related to Government provision of public information, identifies nine principle themes. This chapter has covered seven of these:

- interaction between Government and other stakeholders in the information sector
- Government collection, transfer, and dissemination of public information
- structure and organization of the Government
- pricing of Government provided public information
- standards and compatability of government information services and products
- role of the GPO and the depository library program
- public information needs and information gathering behavior

The major theme related to "public information needs and information gathering behavior." Twelve actual policy issues were addressed from the seven themes:

- competition between Government and other stakeholders
- types of information to be collected, organized, and disseminated
- Executive versus Legislative controls
- value of information as a commodity
- definitions of "cost recovery"
- bibliographic control issues
- revision of Title 44, United States Code
- role of GPO as a printer and publisher
- types of information and formats to be included

- value of information as a "social good"
- availability versus access
- determining specific user segments information needs for specific types of public information

Chapter 4 will examine both the principle themes and actual policy issues in some detail.

CHAPTER 2

REVIEW, SYNTHESIS, AND ANALYSIS: EFFECTS OF INFORMATION TECHNOLOGY ON THE FEDERAL GOVERNMENT'S PROVISION OF PUBLIC INFORMATION

This chapter provides a review, synthesis, and analysis of significant studies related to the effects of technology on Government provision of public information. After providing definitions of key terms, a synthesis and analysis of significant studies will be presented. Chapter 4 appendices describe topics requiring research related to the effects of information technology on access to public information (see Appendix 4-10) while the appendices to this chapter provide a summary review of the most significant studies examined (see Appendix 2-1) and an annotated bibliography of those studies (see Appendix 2-2).

For purposes of this chapter, the term "information technology" is considered as the application of mechanical or electronic tools which direct, shape, and control the production, delivery, and acquisition of information (Glaser, 1972, p. 23). Chapter 1 defined both information and public information. Public information, which is collected and/or developed at Government expense or as required by public law, not considered to be classified, personal, or otherwise subject to exemptions of the Freedom of Information Act (FOIA) or Privacy Act. It is produced, primarily for the purposes of communicating with, educating, or informing one or more segments of the public (National Commission on Libraries and Information Science, 1982, p. 78).

Public information, as shown in Chapter 1, is a type of "government information." It is that information which the Government has both a responsibility and a right to make available to the general public and which "the agency actively seeks, in some fashion, to disseminate such information or otherwise make it available to the public" (Office of Management and Budget, 1980, p. 38461). "Government information," however, might not be intended for use by the general public; in fact, the Government might be its primary user for purposes of administering various internal programs and activities (Office of Management and Budget, no date).

"Effects" of information technology on Government provision of public information are considered as any results or impacts which affect an individual's ability to (1) stay adequately informed of the activities and information services/products which the Federal government offers or in which it participates, or (2) identify and gain physical access to public information for the resolution of specific information needs (see Chapter 1).

Since there is a paucity of "studies" conveying "empirical evidence or theoretical/conceptual models," about the effects of information technology on the provision of public information, "studies" has been expanded to include "significant assessments and essays" related to the topic. The following discussions are based on literature identified via various online bibliographic data bases (See Appendix 2-3) and manual searching of additional indexes, catalogs, and reference sources. The studies identified focused on materials published since 1980 although some significant earlier studies are also reviewed. This approach keeps the emphasis on current literature and the analysis within the framework of the Paperwork Reduction Act of 1980.

Synthesis and Analysis

Overall, much of the literature on the topic of the effects of information technology on Government provision of public information can be characterized as: repetitive, non-empirical, politicized, and, at times, somewhat simplistic. Perhaps due to the highly political and complex nature of the topic and the significant economic and social issues at stake, many writers argue from a specific viewpoint which often ignores the broader perspectives.

A number of themes have been identified for analysis in this section:

- contradictory terminology
- provision versus access to public information
- bibliographic control over Government produced public information
- politicising and enforcing information technology policy
- cost and technology driven Federal planning
- differences in technological information life cycles
- lack of involvement by Government officials in information policy development
- "Competitive" versus "Public Policy" models of information technology
- paradoxical role of libraries regarding access to public information
- information technology and information gaps
- responsibilities for providing access to information technologies
- effects of information technology on access to public information

Taken together, these themes suggest that there has not been, as yet, adequate interest on either the part of the public or Government officials to address and resolve issues related to the effects of information technology on access to public information.

Concerns and issues related to information technologies that have been identified since the 1970s remain to be resolved (National Commission on Libraries and Information Science, 1976, p. 4):

> The consequences of this newly emerging information environment are poorly understood analytically, but they are destined to have an enourmous impact on the Nation's economic growth, our social development,

> and our individual lives.... [Government] should accept responsibility for facilitating the introduction of information technology and systems into our society in ways which conform to our democratic principles and respect our national ideals.

Overall, the review of relevant studies (see Appendix 2-1) suggests that the consequences of information technology are still poorly understood and that the Federal government has not accepted responsibility for facilitating the introduction of that technology into the American society.

Contradictory Terminology

Few definitions of key terms are commonly accepted in the literature. As an example, "government information" is used synonymously with "public information" (Culnan, 1984, p. 2) or the term does not distinguish between "what is generally made public versus what is generally withheld" (Joint Committee on Printing, 1979, pp. 30-31). However, other sources such as those from the the Office of Management of Budget (no date) and the National Commission on Libraries and Information Science (1982), suggest that the terms are not synonymous: "the distinguishing characteristic of public information is that the agency actively seeks, in some fashion, to disseminate such information or otherwise make it available to the public (National Commission on Libraries and Information Science, 1982, p. 77). The NCLIS report identifies four specific difficulties with the use of "government information" and provides examples of different types of government information--only some of which is "public information" (Ibid., pp. 19-22).

Other examples of contradictory or unclear terminology have to do with defining the differences between the "private" and the "public" sectors--especially in terms of applications of information technology. Lowi (1972) forecasted this "blurring of sector lines" and one writer has suggested that the terms be dropped in favor of the term "information sector" (Levitan, 1981).

Figure 2-1 is a representation of two conceptual approaches in describing the differences between these two terms. One organization may provide numerous information services or products--some of which might be seen as belonging traditionally in the public sector, and some in the private sector. Regardless of the "public" or "private" nature of the organization, public versus private differentiations may not hold true in the information sector of the economy.

The third area where some definitional confusion exists has to do with "information technology." The review in this chapter has taken a broad view of the term. However, some studies never define it nor include a list specific technologies. For purposes of policy development, information technology should be thought of as any mechanical or electronic application to obtain, store, retrieve, deliver, or disseminate information, and not in terms of specific technologies (since they will change and develop over time).

Provision versus Access to Public Information

The studies reviewed frequently assume that "provision" of public information is the same as "access" to that information. Studies such as Information Needs of Rural America: The Role of Libraries and Information Technology (Department of Agriculture, 1984) clearly indicate that the provision of public information through numerous bibliographic and numeric data bases currently occurs, but this information is not accessible bibliographically or physically in most rural areas of America at this time. Similiar examples can be shown for other "disenfranchized" members of our society.

FIGURE 2-1

TWO APPROACHES TO DEFINING PARTICIPANTS IN THE INFORMATION SECTOR

1. Traditional Approach

Name of Organization or Institution	Private Sector	Public Sector
a. Universities		
b. Abstracting Firms		
c. Federal Government		
d. State Clearinghouses		
e. ...and so forth		

2. Information Services Approach

NAME OF SERVICE OR PRODUCT	Service is "Free" (includes Gov. Subsidies)	Cost Recovery only	Cost Plus Minimal Handling Fee	For Profit
a. NTIS SCRIM Service			X	
b. Consumer Information services	X			
c. American Statistics Index (ASI)				X
d. ...and so forth				

Statements suggesting that the technological advances in computers, telecommunications, television, and micrographics are working to make public information more accessible to the public at far less cost (Robertson, 1981) fail to detail the underlying assumptions for such access to occur. Typically, the following conditions must be operative for technological provision of public information to provide increased access to that information:

- individuals are aware that such information exists and has potential to resolve their information needs
- Government provided public information, will, in fact, resolve the problem solving and decision making needs of the individual
- the public information provided via information technology is not more easily accessible in a more traditional format
- Government agencies maintain adequate bibliographic control over public information and provide such lists, indexes, and catalogs to the individual
- public or private agencies establish effective delivery systems for that information
- individuals have the personal financial resources to acquire the hardware (be that a microfiche reader, a microcomputer, etc.) necessary to use or obtain such information
- individuals know where to go, how to obtain, and how to use the necessary technology if they do not have it in their own home or office

In short, technological provision of public information is not the same as access to all this information and the literature often fails to recognize this difficulty.

Bibliographic Control over Government Produced Public Information

Technological applications for information storage and retrieval systems have assisted in improving the degree to which bibliographic control is maintained over Government produced public information. The term "bibliographic control" suggests the recording of descriptive, subject, and analytical information concerning a body of documentation and the organization of that information, including (Hernon and McClure, 1984, p. 59):

- the identification of information output
- organization and description of information output
- physical availability

Inclusion of government publications in OCLC (an online bibliographic utility) since 1976, which are distributed through the GPO depository library program, and the numerous applications librarians have made from that inclusion (Walbridge, 1982) are a significant step toward the objective of improved bibliographic control over government publications. But, as Myers (1985) has shown, there are numerous problems with the quality of the data in the GPO cataloging tapes. Further, publications and public information distributed through the depository library program comprise only a small portion of public information provided by the Government and the program stresses only two information formats, i.e., microfiche and paper copy.

Although Title 44, U.S. Code, gives the responsibility for the bibliographic control of government publications to the Government Printing Office, bibliographic control over machine-readable data files (MRDF) and other non-hardcopy formats produced by the Federal government is limited. Sprehe (1981) notes that rarely do agencies have budget lines for making MRDFs accessible and that there is confusing and contradictory policy about how such data are to be indexed and bibliographically controlled.

Heim (1983) has shown that in recent years there are few indexes or up-to-date listings of Federal MRDFs, and that there is no clear sense that such is a Federal responsibility. In a later article, she refers to this situation as a "dismal current state of affairs vis a vis coordinated access to government produced machine-readable data" (Heim, 1984, p. 122).

One important effect of technology on Government provision of public information is the degree to which that information technology can be used to establish bibliographic control over public information. The literature review suggests that the Federal government, while deeply involved in the design and development of information systems for the collection and storage of information has paid less attention to bibliographic control and provision of public access to information contained in those systems--regardless of the format of that information.

Applications of Federal information technology appear to be intended first and foremost, to meet the specific internal needs of the producing agency rather than a broader mandate or purpose related to provision of public information. Existing directives, primarily from OMB, tend to encourage the use of criteria such as cost and duplication rather than degree to which the information is accessible (bibliographically or otherwise) as the primary factor to determine its "value" or justification for its continued existence.

Politicising and Enforcing Information Technology Policy

An interesting conclusion offered in a National Bureau of Standards report is that the Paperwork Reduction Act of 1980 may undermine continuity and development of information technology policy. Since many of the individuals assigned responsibility for Information Resources Management (IRM), and setting/enforcing of policy in the various agencies are senior staff, there is a high turnover rate in these positions. Therefore, it is difficult to develop, implement, and maintain a consistent policy (1983, p. 230).

Each administration tends to have different political assumptions about the appropriateness and content of information technology policy related to public information. For instance, numerous writers (Abrams, 1983; Levin, 1983; Hayes, 1983) have commented on the Reagan administration's tightening of restrictions over access to public information.

The activities of "Reform 88," the program of the President's Task Force on Management Reform has led to significant cutbacks on the production of government publications (Stokes, 1984). And in one study of the impact of the Reagan administration's information policies in the area of the health sciences information, the author concluded that "Presidential policy can have direct and indirect consequences for information dissemination," which in this instance, resulted in (1) reduced availability to health sciences information through the GPO depository library program, and (2) a decrease of 13% of research and other Health and Human Services (HHS) reports between 1980 and 1983 (Florance, 1984, p. 281-282).

Indeed, the Government Printing Office (GPO) is a case in point regarding its inability to enforce the provisions of Title 44, U.S. Code. Although required by law to provide bibliographic control, print, and deliver a wide range of publications, other Government agencies may ignore such legislation on a regular basis. Recently, Executive branch agencies have taken to the courts not to be forced to coordinate their printing and distribution through the GPO (INS vs. Chadha, 1983). More recently, NASA has attempted to contract for publishing and distribution outside the GPO structure ("Print Deals Seen Making GPO a Paperless Tiger," 1984). An apparent loophole in the 1978 Copyright law (17 USC 105) allows privatizing government-funded information of which "only a negligible portion of this knowledge is shared with taxpayers" (Schnapper, 1984, p. 209).

The literature appears to ignore the consideration that access to Government provided public information, regardless of which information technologies are used, is not likely to be effective without adequate independent oversight and enforcement of existing agency publishing laws and regulations (electronic and non-electronic). Further, "when Congress does decide to enact new laws concerning the collection and access of information through new systems the information infrastructure may have grown to such a complex state that enforcement could be all but impossible" (Salvaggio, 1983, p. 233).

The literature tacitly acknowledges the increased role of the Office of Management and Budget in the development and enforcement of Federal policy related to information technology. Implications of this subtle yet evolving Government reorganization of responsibilities related to information have not been adequately analyzed. But because of "national security" issues, one writer has likened the Executive Branch's increased prerogative of determining the availability of information as "put[ing] the fox in charge of the henhouse" (Hayes, 1983, p. 325).

Thus, the Federal government must consider the development of organizational structures that de-politicise information policy issues. Use of various bi-partisan techniques that cut across Legislative, Executive, and Judicial, branches are essential. Other stakeholders in the information sector may be hesitant to initiate long-range information product development when there is a likelihood of significant changes in information policy with the coming and departing of new administrations.

Cost and Technology Driven Federal Planning

In recent years, the development of Federal information technology policies has been based largely on considerations of cost and availability of information technology. When the design and implementation of information systems is driven by these two factors rather than considerations such as access, availability, and appropriateness of content for user information needs, dysfunctions in terms of Government provision of public information are likely to occur (Bikson, Quint, and Johnson, 1984).

Three examples support this finding. First, various _Bulletins_ and Circulars from the Office of Management and Budget associated with Reform 88 are clearly cost-driven policies regarding the production and distribution of Federal information (see Chapter 3 for a discussion of these Office of Management directives). Second, one of the reports from the Grace Commission, _Report on Automated Data Processing/Office Automation_, suggests numerous areas for savings related to ADP but fails to consider the effects of such savings on access to public information (President's Private Sector Survey on Cost Control, 1983). Third, the recently released _A Five Year Plan for Meeting the Automatic Data Processing and Telecommunications Needs of the Federal Government_ (Office of Management and Budget, 1984) also fails to include planning considerations related to public access and the responsibilities of the Federal government in meeting information needs of the public and providing adequate access to public information.

This attitude permeates OMB directives and is illustrated in the espoused benefits resulting from an OMB review of agency Information Resources Management programs. Benefits from the review as listed are (Office Of Management and Budget, 1982, p. 6):

> improved service delivery, improved technology, reduced public reporting burden, reduced spending, reduced waste, fraud and abuse and

reduced Federal competition of interference with other sectors.

A discussion of benefits related to increased access to public information, improved bibliographic control over public information, or better information dissemination systems to the public are noticably absent.

The number of planned Federal information systems and their cost ($3-$5 Billion) 1983 and 1988 is immense. Yet, minimal descriptive information about the information systems's role/relationship to its public access and availability exists (Office of Management and Budget, 1983b). Federal planning documents tend to emphasize the costs and purposes of the systems as opposed to concerns related to accessing public information.

The effects of cost-driven design and implementation of Federal information systems on access to public information appear to be:

- mechanisms for bibliographic control of such information systems, *and the information in those systems*, are not included in the design or are added on as an after thought
- minimal attention is given to including procedures to insure adequate *delivery systems* of information from the system to appropriate user segments of the public
- little concern appears to be evident concerning which portions of the system should be made available to the public *before* the system is designed and implemented

Government provision of public information is severely handicapped by (1) not planning for bibliographic control of the information, (2) not identifying which information should be made available to the public, (3) not considering how that information can be delivered to the public, (4) not determining which market segments of the public have potential interest in the information system, and (5) not assessing how much (if any) cost should be attached to making that information available to the public, at the time of the original design and planning of that information system.

Further, the cost-driven model for the design and implementation of information systems assumes that an equitable costing of the information services and products can be rationalized against the information needs of various market segments. Statements by groups such as the Intellectual Property Owners, Inc., (September 5, 1984) when testifying in opposition to rules proposed by the U.S. Patent and Trademark Office regarding the pricing of data base access and searching, suggest that the Government may be inadequately considering factors such as access to information systems and encouragement of innovation.

Differences in Technological Information Life Cycles

The vast majority of existing legislation and regulations related to information technology is based on interpretations of information in the context of paper copy or "print." One perspective holds that simply by extending concepts related to access and dissemination of paper copy publications to electronic information systems, existing information policies can be extended without major revision of existing legislation and regulations.

Such views are somewhat naive because they fail to consider the following factors. First, information in electronic format can be up-dated, modified, revised, and deleted rapidly. At any point in time there can be a "new document." Second, many of the information technologies are compatible with each other, e.g., machine-readable data files can be easily reformatted to microfiche. Or, the information within the system can be made available in multi-formats.

The decision to place information in an electronic system, by definition, affects (1) the degree to which that information can be made accessible and available, (2) how and when a "document" within the system will be identified as a discreet bibliographic item, and (3) the support items, e.g., computers, microfiche readers, etc., that will be necessary to access the information (whereas paper copy requires only a degree of literacy on the part of the user).

Policy related to Federally mandated retention of archival records must take into consideration which version of the information it is to consider the official record. For instance, an official "publication" may go through numerous drafts and changes, all of which are available in electronic format. Many researchers and scholars believe that these "drafts" should be made available to the public as well as any final publication. Regardless of this issue, there is still the need for the availability of one official and static document (regardless of format) that cannot be changed or altered. Special controls will have to be instituted to insure that such "official" documents can be determined as a result of information technology.

Information within an electronic format has a different life cycle than information in paper format. The current development of Federal information policy does not appear to take such differences into consideration regarding the provision of public information. Indeed, confusion over these difference in life cycles can be put forward as a rationale for avoiding or circumventing existing printing procedures as outlined in Title 44 USC ("Print Deals Seen Making GPO a Paperless Tiger," 1984).

Lack of Involvement by Government Officials

The term "disinterest" may be too harsh an assessment of the degree to which upper level policy makers in the Legislative and Executive branches are concerned with resolving issues related to information policy in general, and the effects of information technology on public information in specific. However, a consistent theme throughout the literature is that "mid-level bureaucrats" tend to be the designers of what information policy exists. This approach tends to enhance a decentralized, splintered, and often contradictory development of information technology policy and concern for access to public information (Congress, 1983, pp. 16-20).

This lack of direct involvement may result from (1) a Federal approach where information policy development is literally scattered throughout numerous agencies, (2) limited political "pay-offs" for involvement in the development of information policy, (3) a lack of Government officials who are knowledgeable about the various issues and their impacts, (4) successful lobbying efforts by for-profit members of the information sector, and (5) limited perceived importance of information technology policy issues vis a vis other national issues and concerns.

Recent efforts to re-structure the Government to better encourage technology transfer have not been successful. For example, the establishment of the Center for the Utilization of Federal Technology (CUFT) as a result of the Technology Innovation Act of 1980 was, in effect, eliminated with the change of administrations and the lack of funding for the Center. A decentralized approach to information technology policy and minimal interest on by top level Government officials regarding the impact of information technology on access to public information, appears to characterize the existing situation. By design or default, the Office of Management and Budget has moved to fill the vacuum related to information policy development.

"Competitive" Versus "Public Utility" Models of Information Technology Policy

This lack of involvement by top Government officials is explained by Salvaggio (1983) as a natural result of the "Competitive Model" (see Figure 2-2) where "the marketplace in the USA in essence assumes the role normally taken by public policy making organizations." He points out that:

- a national information infrastructure can be defined as the people and institutions concerned with the creation, distribution, and use of information services and systems. The USA is one of the only countries in the world today where the information infrastructure is primarily private (authors' emphasis)
- in the Competitive model numerous information policy making bodies have the power to influence or suggest policy, but no agency has the singular authority to create information policy
- historically, there has been a decade or more between the introduction of a new form of information technology and new regulations for its use
- distrust of American big Government is inherent in the U.S. system just as distrust of big business is inherent in the European system

Salvaggio believes that because of the reliance on the competitive model in the U.S., security of personal data will become increasingly difficult. Further, increased information inequality will likely have the greatest impact in areas of videotext and teletext services.

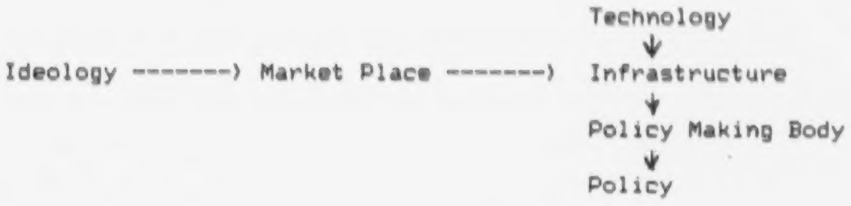
In the alternative "Public Utility" model, outlined by Salvaggio (see Figure 2-2), the processing of information is seen as the key to economic productivity for the nation as a whole and is characterized by a high degree of centralization. "Information technology is developed by private industry with the guidance of the government" (Salvaggio, 1983, p. 238). This model is

FIGURE 2-2

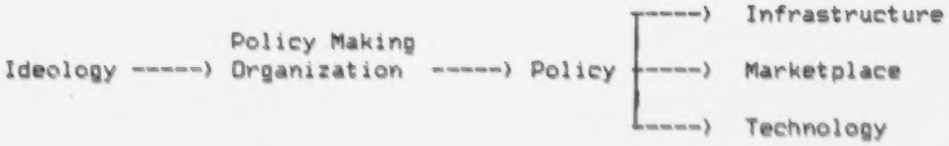
COMPETITIVE VERSUS PUBLIC UTILITY MODELS

FOR DEVELOPMENT OF INFORMATION TECHNOLOGY POLICY*

A. Competitive Model (USA)


Technology
Ideology
Market Place
Infrastructure
Policy Making Body
Policy

B. Public Utility Model (JAPAN)


Ideology
Policy Making Organization
Policy
Infrastructure
Marketplace
Technology

* SOURCE: Jerry L. Salvaggio, "Social Probems of Information Societies," _Telecommunications Policy_, 7 (September 1983): 228-242.

possible in countries such as Japan because there is not the same apprehension of the Japanese toward information privacy issues and mistrust of big Government as there is in the U.S. Further, the "Public Utility" Model is likely to offer greater equality of access to information at a reasonable cost.

Salvaggio's assessment is especially interesting when comparing the effects of the two models on controlling social problems (see Figure 2-3). He points out that "changing information policy will not necessarily minimize social problems associated with technology, particularly in the Competitive model" because policy has little influence over the marketplace (Ibid., p. 241). Since "US policy making agencies have traditionally been controlled by the marketplace," there is minimal ability to control social problems in the "Competitive" model. However, the "Public Utility" model can control the effects of information technology on social problems because the policy making body "guides the introduction of new technology, the marketplace, and the information infrastructure" (Ibid., p. 241).

Salvaggio's assessment of the U.S. development of information technology policy and its effects on social problems was the most illuminating conceptual study examined for this review. Clearly, the national ideology toward information technology, Government, and the marketplace affect the development of policy, a policy that according to Salvaggio, is summarized in statements issued from the Information Industry Association (1983):

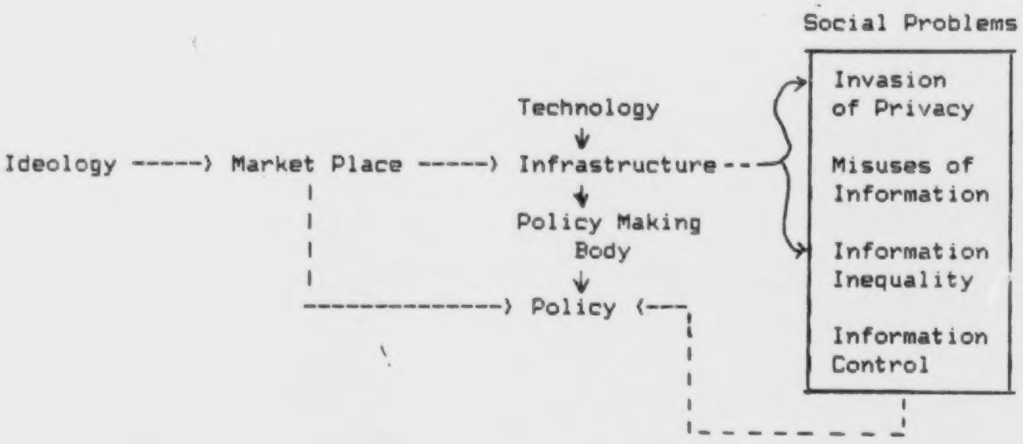
- Government should not develop and disseminate new information products or services that compete with those already available from or planned by, or which could be provided by, private sector sources
- all information products or services provided by Government should be reviewed periodically in the light of expanding private sector

FIGURE 2-3

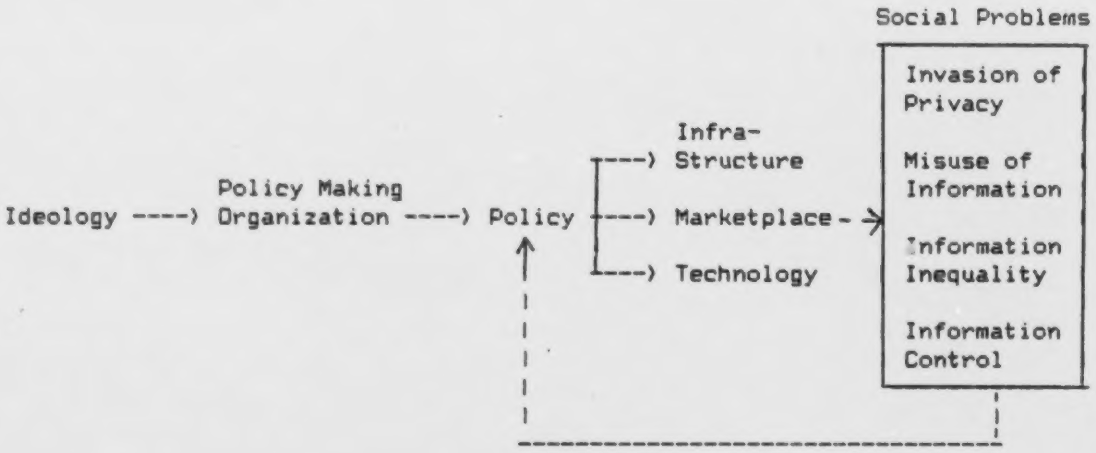
IMPACT OF COMPETITIVE VERSUS PUBLIC UTILTIY MODELS

ON SOCIAL PROBLEMS*

A. Competitive Model (USA)


Social Problems
Technology
Ideology
Market Place
Infrastructure
Policy Making Body
Policy
Invasion of Privacy
Misuses of Information
Information Inequality
Information Control

B. Public Utility Model


Social Problems
Ideology
Policy Making Organization
Policy
Infra-Structure
Marketplace
Technology
Invasion of Privacy
Misuse of Information
Information Inequality
Information Control

SOURCE: Jerry L. Salvaggio, "Social Problems of Information Societies," Telecommunications Policy, 7 (September 1983): 228-242.

> capabilities with a view toward, wherever possible, encouraging the private sector to meet information needs by becoming involved in the production and distribution of such products and services

Thus, the decentralized "Competitive" model that has evolved in the U.S. versus the centralized "Public Utility" model in Japan offer American policy makers a clear difference between possible approaches for the development of such policy. Further, the existing "Competitive" model in the U.S. may be modified with selected "Public Utility" components which may allow some degree of control over information technology policy while still preserving the importance of the marketplace.

But Japan's reliance on the "Public Utility" model may be changing. Japanese companies, "worried that they are falling behind the U.S. in telecommunications have convinced senior government officials to end the government's telephone monopoly" ("IBM and Others Maneuver...," 1984). The privatization of Nippon Telegraph & Telephone may be a significant break from the government's traditional information policies.

Some might argue that the Federal government may be currently establishing miniature information public utility companies simply through the contracting of the design and development of information systems to private companies ("The SEC's Plan to Put a Mountain of Paper Into a Computer," 1984). Companies which design such systems automatically gain a competitive advantage over other companies because of their immediate access to the information systems and their ability to enhance the systems with value added information services or products (Rubin, 1983, pp.78-79). Yet, the successful contractor for EDGAR [the SEC's information system] may escape Federal regulation of its activities, especially those associated with providing "adequate access" to that public information.

Paradoxical Role of Libraries Regarding Access to Public Information

A factor inadequately considered in Salvaggio's "Competitive" versus "Public Utility" models is the role of libraries in the Government provision of public information. Unlike many countries, the United States has a strong system of academic, public, and special libraries that have great potential for increasing access to public information. Indeed, despite the various weaknesses related to the GPO depository library program (Hernon and McClure, 1984), such programs may provide models for other countries attempting to design a system to provide public access to selected Government information.

Yet, paradoxically, the Federal government frequently ignores existing library information networks for bibliographic control, information acquisition, and information dissemination, *already* in place. Further, in addition to the GPO depository library program, other depository library programs have been established to distribute patent information, census material, and maps and charts, etc. These depository programs are operated at minimal *direct* costs to the Federal government for the services and activities that the libraries must provide in order that the public have access to the information.

Federal statements such as "the Federal Government shall rely upon the [GPO] depository library system to provide free citizen access to public information" (Office of Management and Budget, 1980, p. 38462) are common. Numerous pronouncements about the importance of libraries and the depository library program as a means of providing access to public information can be identified (National Commission on Libraries and Information Science, 1980; National Commission on Libraries and Information Science, 1982; and Joint Committee on Printing, 1984). However, little evidence can be found of formal efforts by the Federal government to better utilize libraries for increased access to Government information. Instead, Federal officials appear to see the GPO depository library program as a cheap alternative to having to develop more or better information dissemination mechanisms (Hernon, McClure, and Purcell, Chapter 1, In press).

Examples of the Federal government's hobbling the depository library program are much easier to find; examples include:

- the failure to pass the National Publications Clearinghouse Act of 1979
- minimal direct financial support to depository libraries for participating in the program (Hernon and McClure, 1984)
- failure to appoint (or hire) key positions in the Government Printing Office during 1983-1984
- Executive agencies' efforts to circumvent various GPO regulations and guidelines for depositing publications in the system and making them available to the public.

These and other difficulties have led one knowledgeable observer to comment, "unfortunately, the Library Program Service is a stepchild within the GPO, and its woefully behind the state of the art in applying technology to its own internal processes and to facilitating the delivery of and access to the information it processes" (Kadec, 1984, p. 416).

A review of significant literature regarding the role of libraries and the effects of information technology on Government provision of public information suggests these paradoxes:

- a number of Federal agencies do not exploit existing knowledge and skills from library and information science in the design and development of information systems although such systems have been designed and operational for use in libraries and information centers, e.g. resource sharing, inter-library loans, bibliographic control, and development of information dissemination programs

- despite the existence of a formal structure for the dissemination of public information, i.e., the depository library program, significant Federal resources are spent on designing and developing competing information programs outside this structure
- despite statements from spokespersons such as Robert S. Willard for the for-profit sector (Information Industry Association), "funding for libraries seems to make a lot more sense during a time of budgetary constraints than funding for Government information services," libraries are not funded by either the for-profit sector or the Government to assist in the provision of public information (Congress, 1982a, p. 65).
- although a number of Federal agencies have been funded to develop sophisticated information delivery systems (e.g., the Patent Office Trademark Search System), only recently has the GPO been able to design an integrated computerized information system to increase, somewhat, access to public information (Government Printing Office, 1983).

It will be years, if ever, before the GPO has computerized information systems on the same level as those already in operation at the National Technical Information Service, the Bureau of the Census, or the National Library of Medicine--to name but a few.

But these paradoxes must also be seen in the context of some confusion on the part of libraries about their role in the provision of public information. Studies, as summarized in Figure 4A-2, have shown that by and large, public information is underutilized in libraries and that some librarians do not maintain adequate levels of collection and staff support (Fry, 1978; Cook, 1982; Hernon and McClure, 1984). Nonetheless, the depository library program and the national structure for library networking, for whatever reasons, have not been exploited as a means to increase access to public information.

Information Technology and Information Gaps

Much of the literature reviewed commented on information technologies to either reduce or increase information gaps in the United States. While it can be argued that information technology has the potential to reduce information gaps in terms of access to public information, existing evidence suggests that the opposite is occurring. Rural America has become disenfranchized from access to public information (Department of Agriculture, 1984), over 60% of all personal computers being bought are by individuals with annual salaries over $35,000 ("Who Are You?," 1984), and studies have shown that the "typical" user of a depository library can be best described as white, middle class, and above average education and income (Hernon, 1979).

The term "information gap" is too generalized to depict specific information gaps that result from information technology. An information gap can be defined as a significant difference between two societal segments in terms of their access to public information. Potential information gaps evolving as a result of information technology are those between individuals who are:

- Government officials versus the general public
- educated versus poorly-educated
- upper income versus lower income
- in urban areas versus those in rural areas
- technology literate versus technology illiterate
- able to access and use information technology versus those who cannot

Studies reviewed paid little attention to the effects of information technology on Government provision of public information in terms of specific types of information gaps.

Studies describing future scenarios for new information handling technologies prefer to stress futuristic images of fact retrieval (rather than information retrieval) and speculate about "pocket-portable flat screen CRT terminals, homed in on a satellite and capable of searching and reading" virtually any information system (Hampel, 1981, pp. 6-33). But, there are few spokespersons for the concerns of those individuals who are not likely to ever possess such information technology equipment and are information disenfranchized--regardless of the reason for such disenfranchisement.

The information have-nots are typically described in economic terms. Despite Government pronouncements that "information is not a free good; [and] no member of the Public should be denied access to public information held by the Federal Government solely because of economic status" (Office of Management and Budget, 1980, p. 38462) little tangible evidence can be identified showing the Government's desire to make public information available to the economically disenfranchized segments of the public.

Few government-wide Federal projects can be identified from the literature whose primary purpose is to develop applications of information technology specifically for the purpose of increasing the public's access to government information. The Canadian government, for example, has designed and implemented a videotext system, TELIDON, which makes a wide range of government information both available and accessible to a broad range of market segments in Canada (Rose, 1982).

Similiar attempts in the United States are done on an agency by agency basis as opposed to a central coordinating office. For example, CENDATA, from the Bureau of the Census, provides online information about selected Bureau programs, news releases, ordering information, and selected statistical data seen to be of "high interest" ("CENDATA: The Census Bureau's Online Information Service," 1984). As a result, some agencies have exploited information technology for improved public access while others, such as the Department of Energy and the Environmental Protection Agency, have ignored such techniques and severely limited the publication and availability to a broad range of information (Public Citizen, 1984a,b).

The National Commission on Libraries and Information Science has launched studies "to examine the impact of new technology--primarily information technology--on the providers and users of library and information services" and to address the needs of one of information have-nots of society, rural America, through the National Rural Information Services Development Program (1984, pp. 28-33). But such studies are not Government-wide implementation programs for delivery systems intended to equalize access to public information.

McHale (1972, pp. 202-203) the effects of information technology on the "information haves" and the "information have-nots," and their possible responses (see Figure 2-4). Because American society is pluralistic, the effects must be seen in terms of individualized situations. Traditionally, a strength of American society is maintenance of an informed electorate--one that can participate in the activities of the Federal government on equal footing with Government officials. With the existence of an information gap and individuals who can respond only in terms of indifference, inadequacy, or rejection (see Figure 2-4), a traditional strength (i.e., an informed public) of American society is undermined.

FIGURE 2-4

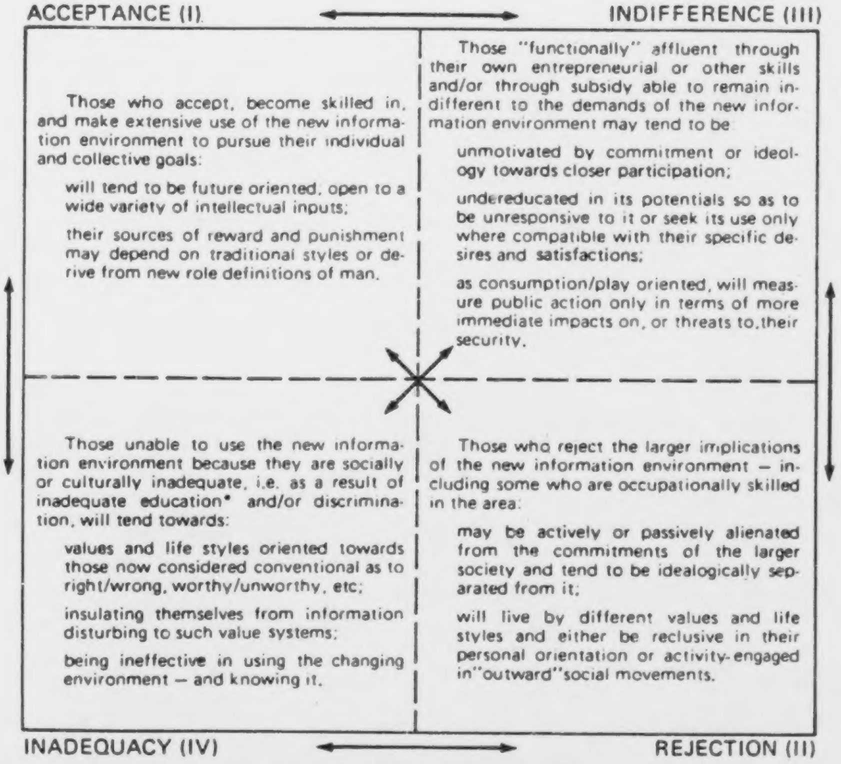
EFFECTS OF INFORMATION TECHNOLOGY ON SOCIETAL INFORMATION GAPS

A. Implications for "Haves" and "Have-nots" of Information-Rich Society

◄ INFORMATION "HAVES"	INFORMATION "HAVE NOTS" ►
Become basis for elites in a restratified society	Training in applications of technology – how to use rather than what to use for
More socially mobile, with diverse career paths and life style opportunities	Will tend to be more locked-in to particular jobs – less able to change occupations
Their acquisition of more and new knowledge becomes progressively easier	May tend to resign themselves to helplessness and alienation – will seek and use less and less information
Added capacity to create their own knowledge bases	Less able to cope with perplexing changes
More able to organize and associate at a distance via access to new technics	Will become suspicious and hostile to the "knowledge people"
May possibly have more enlightened self-interest	Limited social mobility

B. Categories of Response

The proportions of the population that can be categorized in these ways are moot. They will depend on specific developments and events in society, including some involving information technology, and on the rate and scale of impact of these developments and events. It seems safe to conjecture, however, that categories III and IV will comprise, as they do now, the vast majority of the population. Over time, hopefully, there will be some movement toward categories I and II. (Michael)



ACCEPTANCE (I)

Those who accept, become skilled in, and make extensive use of the new information environment to pursue their individual and collective goals:

will tend to be future oriented, open to a wide variety of intellectual inputs;

their sources of reward and punishment may depend on traditional styles or derive from new role definitions of man.

INDIFFERENCE (III)

Those "functionally" affluent through their own entrepreneurial or other skills and/or through subsidy able to remain indifferent to the demands of the new information environment may tend to be:

unmotivated by commitment or ideology towards closer participation;

undereducated in its potentials so as to be unresponsive to it or seek its use only where compatible with their specific desires and satisfactions;

as consumption/play oriented, will measure public action only in terms of more immediate impacts on, or threats to, their security.

INADEQUACY (IV)

Those unable to use the new information environment because they are socially or culturally inadequate, i.e. as a result of inadequate education* and/or discrimination, will tend towards:

values and life styles oriented towards those now considered conventional as to right/wrong, worthy/unworthy, etc;

insulating themselves from information disturbing to such value systems;

being ineffective in using the changing environment – and knowing it.

REJECTION (II)

Those who reject the larger implications of the new information environment – including some who are occupationally skilled in the area:

may be actively or passively alienated from the commitments of the larger society and tend to be idealogically separated from it;

will live by different values and life styles and either be reclusive in their personal orientation or activity-engaged in "outward" social movements.

*Inadequate education is here meant to include the education provided most people who will populate the next twenty years – an education that leaves them incompetent in analytic and synthetic cognitive skills, in interpersonal relationships, and in self-understanding. (Michael)

Source: John McHale, "The Changing Information Environment: A Selective Topography," in Information Technology: Some Critical Implications for Decision Makers. New York: The Conference Board, 1972, pp. 202-203.

Responsibilities for Providing Access to Information Technology

The degree to which the Federal government has, in fact, accepted responsibility for providing access to public information and narrowing existing societal information gaps is minimal, at best. The degree to which for-profit organizations indicate concern about "equal" access, "adequate" availability, or narrowing the information gaps in American society is also minimal. By and large, activities of both the Federal government and the for-profit segments of the information sector "seem more reflective of philosophical perspectives than objective analysis" (Congress, 1982b, p.79).

Information technology appears to be exacerbating philosophical differences within the information sector but paradoxically, without encouraging empirical research and objective analysis. Since information gaps exist, the argument that "private sector" organizations will fill these gaps either on their own or without Federal subsidy appears to be an invalid assumption.

By definition, for-profit organizations will fill only those information gaps in which there is a perceived significant potential for profit-making. Thus, poorly educated, lower income, and technologically illiterate segments of the public are not likely to be target audiences for the for-profit information stakeholders when they develop information systems of public information.

As a result, ownership of public information in tax-supported Federal information systems becomes a key concern. Currently, public information produced and disseminated by the Federal government does not contain exclusivity rights as does public information produced and disseminated from for-profit organizations (Salaman and Hettinger, 1984). When public information "falls into the hands of the private sector and copyright is claimed, does this not constitute ownership" (Smith, 1984, p. 280)? The implications of public information ownership when it is maintained by non-Federal stakeholders must be carefully considered.

Responsibility for providing public access to Government information is largely the domain of the Federal government. Once Government information, as the result of its inclusion in an information storage and retrieval system, is obtained by the for-profit sector, the responsibility for public access takes on much less significance. Indeed, policy statements by the Information Industry Association (1983) and their spokespersons (e.g., Zurkowski, 1984; and Congress, 1982a) do not detail their responsibility for insuring adequate access to Government produced public information once it is part of a for-profit information system.

However, neither Congress nor the Executive branches have accepted responsibility for developing programs that assist the public in gaining skills related to technological literacy. Clearly, there is a difference between making available public information and developing programs whereby the public can obtain the "technological literacy" to gain access to public information in electronic formats. Indeed, "educational legislation...fail[s] to include any systematic effort to incorporate technological literacy into the mainstream of educational programming" (Dyrenfurth, 1984, p. 1). Proposals to the Government Printing Office to develop educational programs to improve the technological literacy of depository libraries also have received little support (McClure, 1984b).

Effects of Information Technology on Access to Public Information

Studies that deal with identifying specific effects of information technology on access to public information are based primarily on speculation. At best, they are "informed guesses" about (1) the effects on specific segments of producers, disseminators, and users, (2) time lines when certain types of information technologies will be developed, and (3) how Federal legislation and regulations will develop in the foreseeable future (Congress 1982b, pp. 125-127).

For example, Figure 2-5 is a summary of selected effects of information technology on producers of public information. The effects that are included in this figure have been culled from various studies examined. Herein lies a significant difficulty: virtually all discussions of the effects of information technology on access to public information are speculative and in many instances, are contradictory. Thus, one may "pick and choose" the effects that information technology might have on public access to government information since virtually no empirical research exists on the topic.

Porat has provided the single best discussion of the effects of information technology on specific segments of the economy (1977, vol. 1, pp. 208-239). He includes 21 tables summarizing: (1) applications of information technology for specific segments of the economy (based on SIC categories), (2) resultant policy issues, and (3) locus of Federal responsibility for addressing the issues. His analysis considers these effects in terms of "An Information Policy Framework" as shown in Figure 2-6. This model demonstrates the inability of a "vertically" organized Federal structure (i.e., within an agency or department) to deal with "horizontal" impacts and issues (across agencies or departments) related to information technology policy.

But most discussions of the effects of information technology on producers, disseminators, and users of public information are limited conceptually. It is possible to develop models along the lines of that suggested in Figure 2-5, and the tables listed in Porat (1977, vol. 1, pp 208-239). For examples, the models and table may identify possible effects of

FIGURE 2-5

SELECTED EFFECTS OF INFORMATION TECHNOLOGY ON PRODUCERS

Types of Producers	Telecommunications	Mass Data Storage Devices	Personal Computers	Machine-Readable Data Files
1. Generators (a) (Researchers, scientists, other individuals)	-greater access to and diversity of "invisible colleges" -bypass traditional roles of primary producers	-maintain large personal libraries	-greater individual control to format and manipulate information	-need for standardized procedures/ protocols -personal creation of MRDFs
2. Primary Producers (b) (books, journals, research reports)	-encourages producers to become disseminators -access to new markets	-ability to maintain large inventories of information -produce large "opening day" library collections information	-development of new software -increase in electronic publishing	-decreased demand for traditional hardcopy formats
3. Secondary Proodoucers (b) (Indexes, bibliographies, data bases)	-encourages producers to become disseminators -access to new markets	-more data available for distribtuion -larger more comprehensive indexes are possible	-desgin of software that assists in access to indexes -design of indexes primarily for use on personal computers	-move to greater development of numeric data bases -need for quality control procedures over data

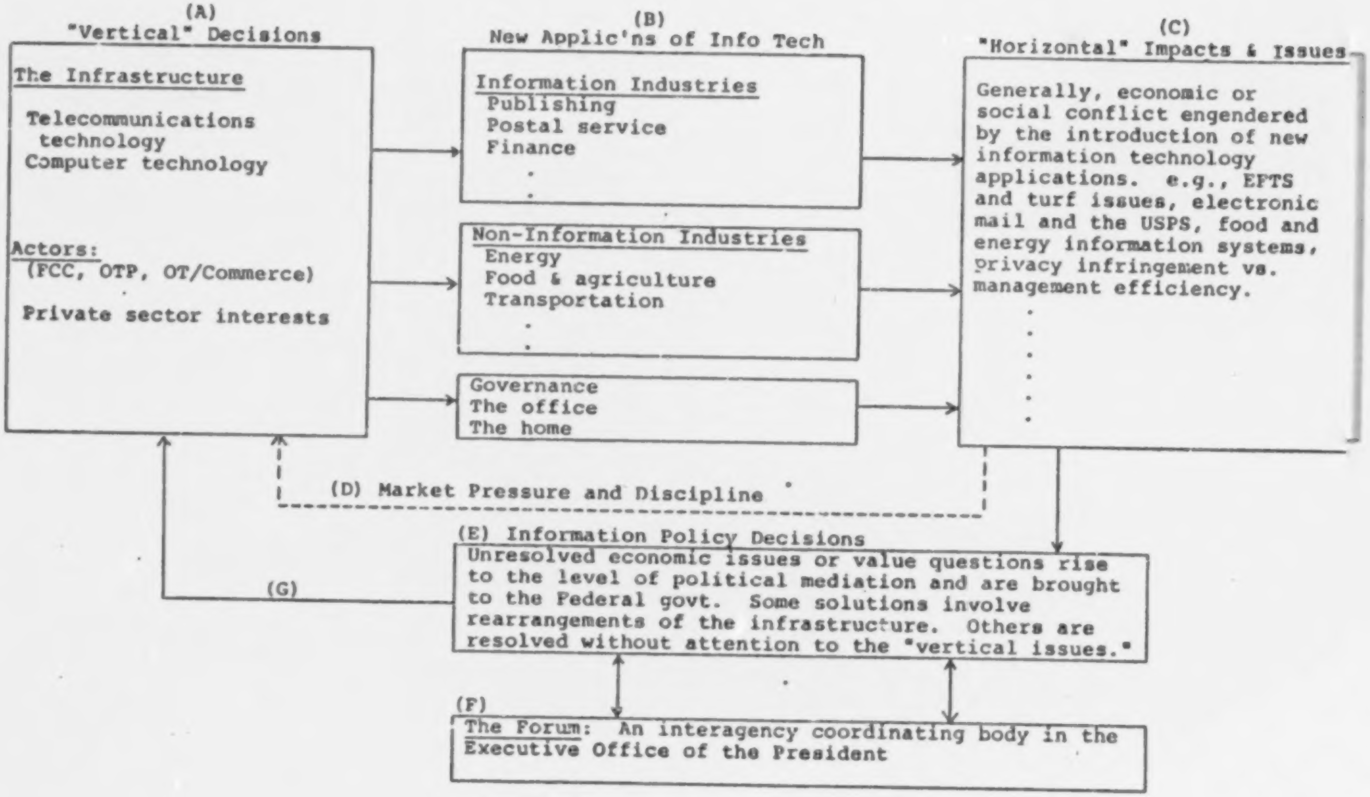
---

(a) Source: Information Technology: Some Critical Choices for Decision Makers. New York: The Conference Board, 1972, p. 212.

(b) Source: Congress, Office of Technology Assessment. Computer-Based National Information Systems: Technology and Public Policy Issues. Washington, D. C.: Government Priting Office, 1981, pp. 163-166.

FIGURE 2-6

AN INFORMATION POLICY FRAMEWORK*


(A)
"Vertical" Decisions
The Infrastructure
Telecommunications technology
Computer technology
Actors:
(FCC, OTP, OT/Commerce)
Private sector interests
(B)
New Applic'ns of Info Tech
Information Industries
Publishing
Postal service
Finance
Non-Information Industries
Energy
Food & agriculture
Transportation
Governance
The office
The home
(C)
"Horizontal" Impacts & Issues
(D) Market Pressure and Discipline
(E) Information Policy Decisions
(F)
(G)

Generally, economic or social conflict engendered by the introduction of new information technology applications. e.g., EFTS and turf issues, electronic mail and the USPS, food and energy information systems, privacy infringement vs. management efficiency.

Unresolved economic issues or value questions rise to the level of political mediation and are brought to the Federal govt. Some solutions involve rearrangements of the infrastructure. Others are resolved without attention to the "vertical issues."

The Forum: An interagency coordinating body in the Executive Office of the President specific types of information technologies on types of producers, disseminators, and users. But the underlying assumptions of the approach encourage a simplistic and often erroneous view because:

---

*SOURCE: Marc Porat, The Information Economy, vol. 1 (Washington, D.C.: GPO, 1977), p. 208.

- clear distinctions among producers, disseminators, and users of public information cannot be identified
- the organization or institution may be a producer one day, a disseminator the next, and later a user _of the same information service_
- effects of information technology on stakeholders in the information sector are not linear; they are interactive and multivariate

The usefulness of a conceptual approach that fails to consider the overlaps among producers, disseminators, and users; that establishes artificial demarcations between "public" sector and "private" sector; and does not consider information life cycles is limited.

Alternative conceptual tools are needed to consider the effects of information technology on access to public information. A first consideration is to develop an approach that recognizes the overlap among producers, disseminators, and users such as that shown in part A of Figure 2-7. This figure suggests seven possible contingencies of stakeholders in the information sector:

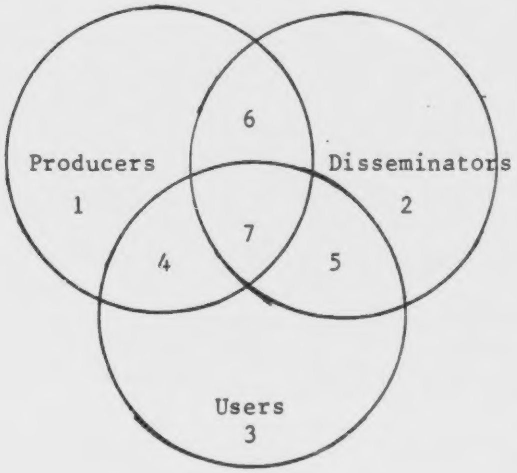
- producers only
- disseminators only
- users only
- producers/users
- disseminators/users
- producers/disseminators
- producers/disseminators/users

These seven categories offer a more realistic representation of the complexity

FIGURE 2-7

EFFECTS OF INFORMATION TECHNOLOGY ON PUBLIC INFORMATION

A. Overlaps Among Producers, Disseminators, and Users


Producers
1
Disseminators
2
Users
3
4
5
6
7

B. Economic Motive of Information Stakeholder

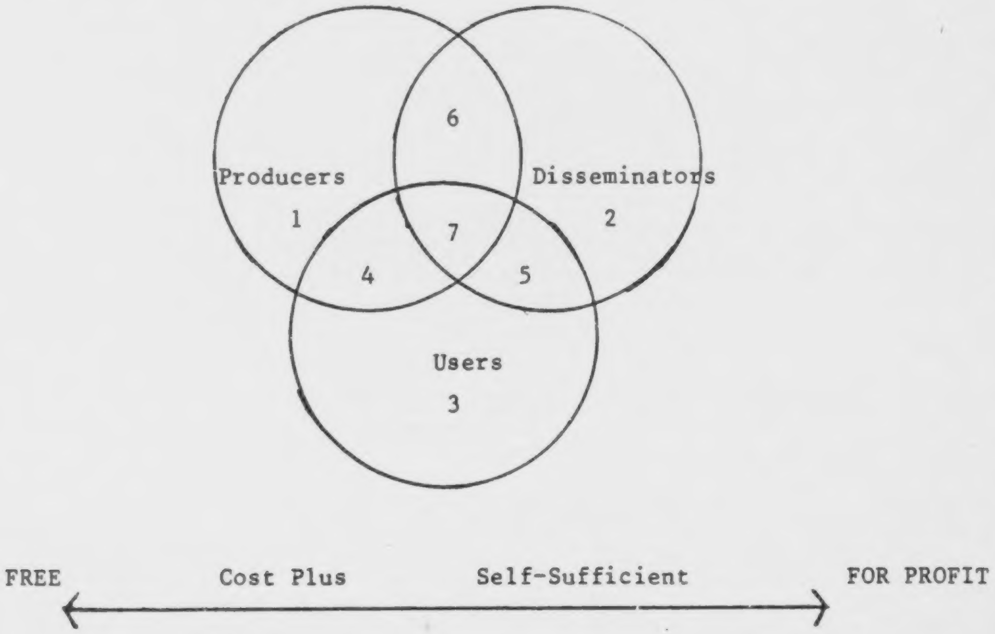
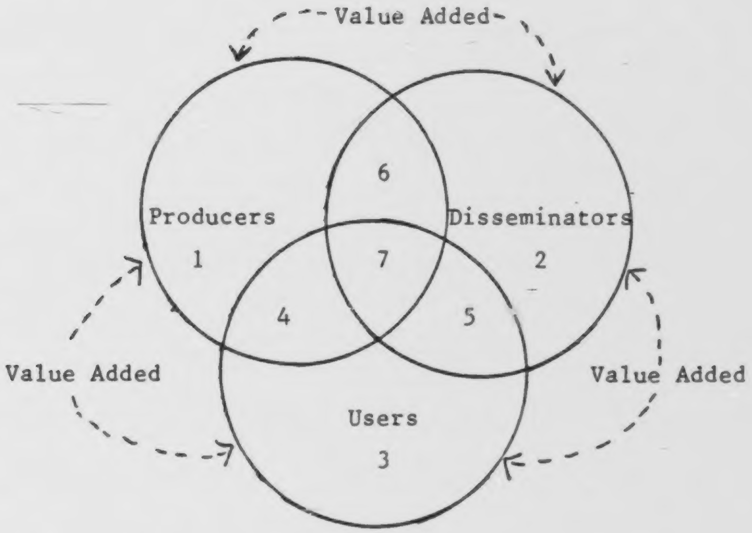
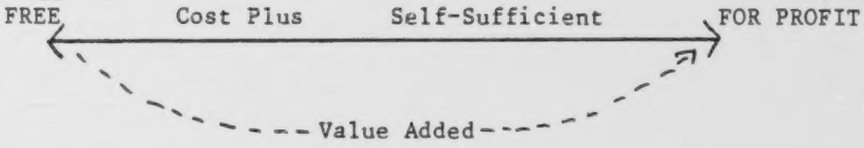

Producers
1
Disseminators
2
Users
3
4
5
6
7
FREE
Cost Plus
Self-Sufficient
FOR PROFIT

FIGURE 2-7

(Continued)

C. Value Added Life Cycles


Value Added
Producers
1
6
Disseminators
2
7
4
5
Value Added
Value Added
Users
3


FREE
Cost Plus
Self-Sufficient
FOR PROFIT
Value Added

of players in the information sector.

Another consideration is to view stakeholders in the information sector on a continuum between providing information services and products as:

- free, i.e., subsidized by Federal government taxpayers but generally seen as "free" by the public
- cost plus fee (for handling or services enhancement, such as that done by the GPO)
- self-sufficient (e.g., as in the case of NTIS)
- profit seeking

As suggested earlier in this section, examples of stakeholders from the public and private sectors of the economy which provide information services and products in two or more of these three categories can be identified. Thus, Figure 2-7, Part A can now be modified, as shown in Part B, to include this additional factor.

A third consideration, when assessing the effects of information technology on access to public information, is the degree to which a specific information service or product is enhanced as it progresses through its life cycle (see Figure 2-7 Part C). This activity, known as the value-added process to information services and products, must be considered since an information service or product can be taken by one stakeholder and enhanced with an additional value (e.g., boolean search capability on a data base) and, thus, a "new" information service or product has been created. Examples of how this value added process to information services or products enhances them has been described in detail by Taylor (1983).

Finally, the type of information technology must also be considered because (1) different information technologies are likely to have different effects on different stakeholders, (2) applications of value added enhancements may differ for the various technologies, and (3) information services or products have varying levels of profitability. This final consideration is shown in Figure 2-8, which offers an alternative conceptual basis for discussing the effects of information technology on Government provision of public information.

Increased development of information handling technologies adds to the likelihood that _any_ information service or product can be enhanced by adding value to it. Figure 2-8 suggests that any of the stakeholders in the information sector has the potential for providing value added enhancements to an information service or product. Therefore, the primary effects of information technology on access to public information relate to the degree to which (1) the various stakeholders can use that technology to enhance existing information products and servicos, (2) such enhancements provide for the information services and products to be profitable, and (3) those technological applications enhance or detract from specific types of users to access that information service or product.

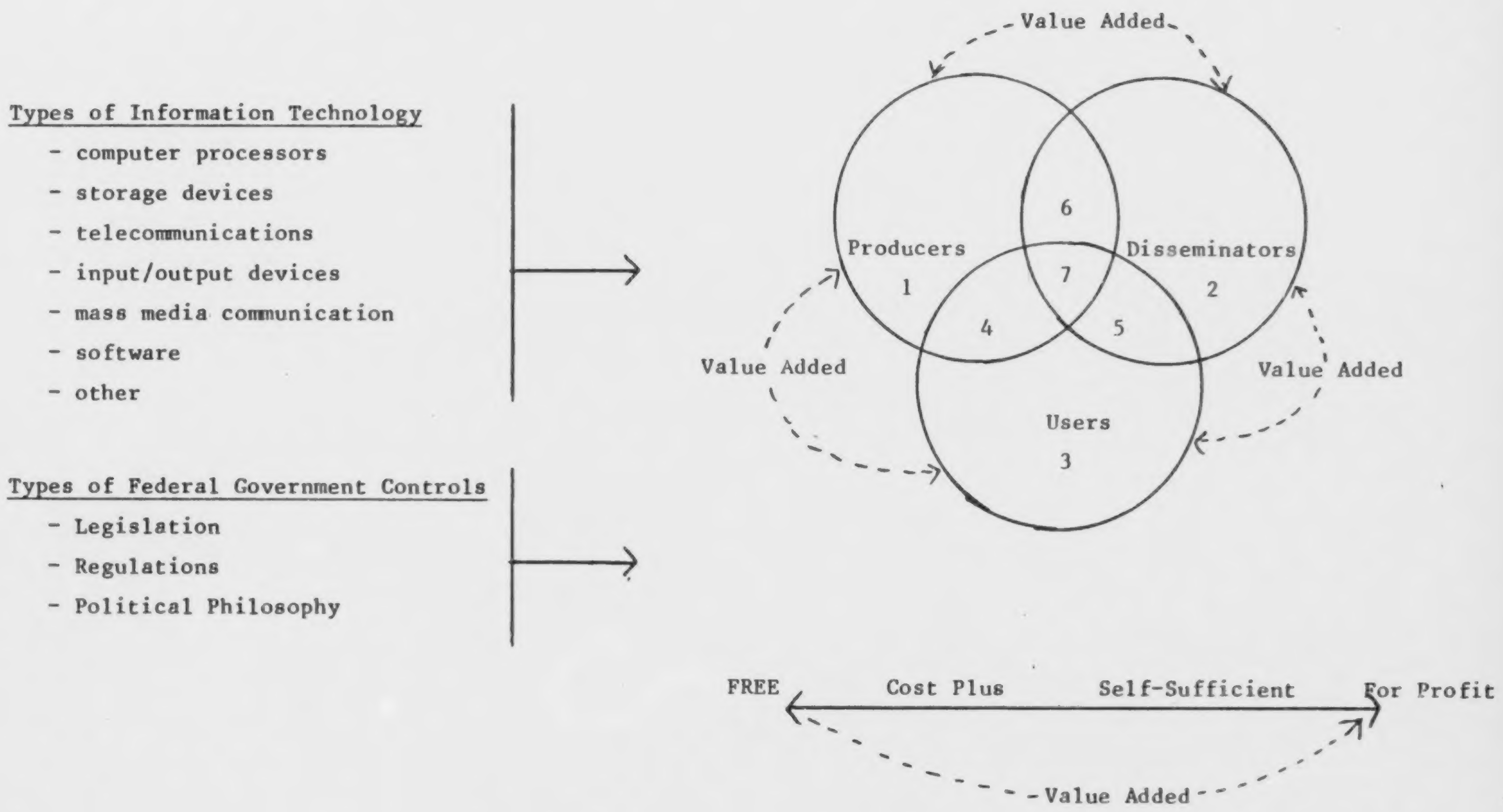
The Politics of Information Technology and Public Information

The review, synthesis, and analysis of significant studies related to the effect of information technology on Government provision of public information have suggested greater concern for political, ideological, and philosophical issues than for pragmatic questions of:

- what information technologies can be best utilized by the information sector in the provision of public information?
- how can information technologies be utilized best by the information disenfranchized segments of society to increase access to public information?

FIGURE 2-8

EXPANDED MODEL FOR STUDYING
EFFECTS OF INFORMATION TECHNOLOGY ON PROVISION OF PUBLIC INFORMATION


Types of Information Technology
- computer processors
- storage devices
- telecommunications
- input/output devices
- mass media communication
- software
- other
Types of Federal Government Controls
- Legislation
- Regulations
- Political Philosophy
Value Added
Producers
1
6
Disseminators
2
7
4
5
Users
3
Value Added
Value Added
FREE
Cost Plus
Self-Sufficient
For Profit
Value Added

- what steps can be taken to insure that the design of Federal information systems, services, and products includes mechanisms for bibliographic control, public delivery systems, and increasing the public's awareness that such systems exist?
- can a uniform pricing structure be developed by the Federal government for each "value added" process attached to an information system?
- what _specific_ types of government information are "owned" by the public and to what degree does the Federal government have a responsibility to add enhancements, or value added processes, to those information systems?

A conclusion that one reaches after reviewing the studies discussed in this chapter is, for the foreseeable future, politics will continue to dominate discussions of relative roles in the information sector and responsibility for provision of public information (McDonald, 1982).

A second conclusion is the lack of Federal involvement in the design, development, and implementation of information technology related to increasing the public's access to government information. The emphasis on information technology at the Federal level appears to be on increasing the collection, storage, organization, and _internal_ retrieval of that information. Minimal concern is given to how information technology can be used to enhance the Government provision of public information.

A third conclusion, however, is that attention should not be focused on information technology per se regarding its effect on Government provision of public information. The analysis suggests that the central issues revolve around "access to public information" and the differing views of the "roles of organizations and institutions in the information sector," rather than the effects of information technology (Clayton, 1981, pp. 6.3-6.4):

> ...future advances in technology will not prove to be the controlling influence in determining the evolution of scientific and technological communication over the next twenty years.... The factors dominating the directions of change will be non technological.

Information technology has served primarily as a cataylst to increase the demand for the Federal government to deal with issues related to privacy, ownership, pricing, security, control, and access to Government information. All of these require policy attention *prior* to the appearance of many of the new information technologies.

Finally, the literature suggests that the development of Federal policies related to information technologies and Government provision of public information will be difficult since so many different practices and procedures already are in place. Clearly, policies are supposed to be developed as a guide for specific actions and procedures. However, *existing* practices and procedures are likely to direct future Federal policies related to information technology.

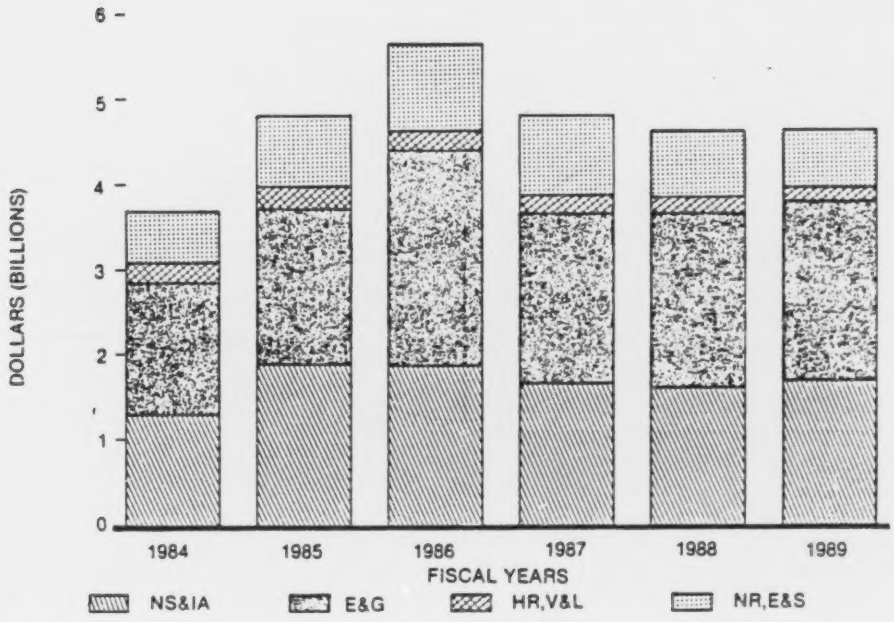
Summary Of Significant Policy Issues Addressed in this Chapter

The Federal government has made a sizable commitment to the purchase and development of information technology. As shown in Figure 2-9, Federal expenditures for information technology acquisitions (as forecasted in 1984) range between $3.5 and $5.5 billion per year, between 1984 and 1989. Such figures *underestimate* the total resource commitment of the Federal government to information technology acquisitions since they do not consider personnel costs, physical facilities support, supplies, or related expenses.

Despite such significant commitments, existing Federal information policies related to the use, application, and public access to that

FIGURE 2-9

FEDERAL INFORMATION TECHNOLOGY ACQUISITIONS 1984-1989*



NS&IA	National Security and International Affairs
E&G	Economics and Government
HR, V&L	Human Resources, Veterans and Labor
NR, E&S	Natural Resources, Energy and Science

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*Office of Management and Budget, A Five-Year Plan for Meeting the Automatic Data Processing and Telecommunications Needs of the Federal Government. vo. 2 (Washington, D.C.: GPO, 1984), p. 5.

information is unclear, contradictory, and oftentimes, non-existent. Little horizontal integration and coordination of information technology is accomplished in the current decentralized administrative structure of the Government. And although the Office of Management and Budget is moving to fill an apparent void in information policy development, there is increased Congressional and Executive conflict over the "proper" role and authority for Federal information collection, organization and dissemination. Congress appears to have the role as "protector of access to public information" while the Executive branch has assumed the role of "efficient manager of Federal information resources."

But under the direction of OMB, administering information-related technologies and activities with "efficiency" and "economy" is confused with making a profit from information services and products. This issue, when considered in the context of issues related to Executive versus Congressional authority for control over information policies and vertical versus horizontal coordination of information policies increases the barriers affecting user access to public information.

Another issue is the consideration that mid-level Federal officials appear to have primary responsibility for policy development within agencies and there is little direct top-level administrative involvement in issues related to the effects of information technology for the Government provision of public information. Indeed, there is a sense of naievete on the part of some Federal officials that (1) existing structures such as the GPO depository library program, the Freedom of Information Act, or the Privacy Act, for example, provide equal opportunity for all user segments to adequately access and obtain public information, and (2) simply because public information is placed in an electronic format it will be automatically more accessible to the public than if it remained only in print format. This issue is discussed in more detail in Chapter 4, Figure 4-4.

Users of public information have not been adequately considered in the design of Federal information systems. Issues that must be addressed to increase user access to Federal information systems include:

- Federal officials typically fail to consider how the information in electronic information systems will be bibliographically controled
- Federal officials frequently fail to assess the impact of an information system on other systems intended to disseminate public information or the degree to which the information is to be disseminated to the public

These issues compound the barriers to public information in that clearinghouses for public information access and dissemination, such as the GPO depository library program, (1) have not been funded adequately to insure access and availability to public information, (2) do not apply recent information handling technologies to public information systems, (3) are unable to disseminate public information in electronic information formats, and (4) provide minimal training and support for assisting users access technologiclaly-based public information. With some exceptions, such as the Bureau of the Census, there are few Federal programs that provide user training or public information access support services for technologically-based public information. Rather, the role of the Federal government in the provision of technologically-based public information tends to be passive.

Federal efforts to price public information on a cost-recovery or profit-making basis will (1) increase the amount of public information in electronic format, (2) encourage contracts to non-Federal information providers, which will have, one assumes, the responsibility for maintaining public information, (3) discourage support to Federal clearinghouses of public information, and

(4) allow individual agencies to make decisions related to hardware and software configurations. These factors are likely to increase barriers to the access and availability to public information.

The issues identified and discussed in this chapter have emphasized the effects of technology on the Government provision of public information in terms of the broad themes summarized in Figure 4-1. The most significant of the issues discussed in Chapter 2 include:

- determining prior to the creation of an Federal information system, the degree to which it is intended to disseminate public information
- developing standards and compatibility among Federal information technologies
- resolving the paradoxical roles of libraries and the depository library programs in the provision of public information
- insuring adequate levels of access and availability to public information in information systems which are "contracted out" to for-profit stakeholders in the information sector
- decreasing the likelihood for information gaps as a result of greater use of electronic information systems for public information
- clarifying who or what is a collector, versus producer, versus disseminator of public information
- minimizing cost-driven versus user-driven design of public information systems
- increasing the use of information technologies for improved bibliographic control and user access to public information
- determining the degree to which the Government is responsible for value added enhancements to public information systems

These issues combine to form a significant policy issue for the Federal government: What is the Government's role in legislating and/or regulating *users'* rights to access public information, establishing formal mechanisms that insure adequate access to public information, and placing responsibility for maintaining adequate access to public information on the *Federal government* rather than the individual?

CHAPTER 3

REVIEW OF FEDERAL LEGISLATION AND REGULATIONS ON THE FEDERAL GOVERNMENT'S PROVISION OF PUBLIC INFORMATION

The Constitution of the United States identifies broad responsibilities for both the President (Article 2, section 2) and Congress (Article 1, section 8), and advances the concept of separation of power. Any discussion of legislation and regulations related to the Federal government's provision of public information and the role of information technologies must be viewed in the context of Constitutional powers and the desire of each branch of Government to assert its authority. Since the Chadha decision (INS vs. Chadha, 1983) struck down the one house legislative veto, the Congress and the Executive Branch have been reexamining previously enacted legislation for language which may be viewed as a violation of the separation of powers clause of the Constitution. This chapter, as well as the next, will identify significant issues and suggest an agenda for dealing with them.

Developments in information technology during the past decade have given rise to a number of issues that the Federal government should consider in order to assure the effective and efficient provision of public information. These issues include the availability and cost of various information technologies, copyright legislation, the protection of individual privacy, transnational data transmissions, the provision of Governmentally distributed information to the public in the most efficient and effective manner, the role of the private sector in assisting in the provision of public information, and so forth. The range of concerns which these issues address is clearly indicated by the large number of bills related to development of information policy which have been introduced in recent sessions of Congress.

A recently published report, Policy Implications of Information Technology (Salaman and Hettinger, 1984), identified three major congressional activities related to the development of information policy. These are:

- improving the educational system for sustained growth and ensuring that society has the full benefit of the new information technology
- maintaining the nation's position of leadership in meeting the "market requirements for information technologies"
- reevaluating the policies, laws, and regulations regarding the rights and freedoms associated with public access to information (p. 14).

This chapter focuses on aspects of the second and third activities.

More precisely, the chapter summarizes and analyzes significant recent legislation and regulations (1978-) related to the provision of public information by the Federal government. Coverage includes both legislation and regulations proposed and enacted. Appendix 3-1 identifies the major legislation and other developments of the past forty years dealing with the Federal government's provision of public information. From this list, eight pieces of Federal legislation and regulations have been selected for detailed analysis. Clearly, information policies having horizontal impacts (impacts among agencies) are emphasized. Those policies having vertical impacts (impacts within agencies) can therefore be reviewed and placed in the context set by this report.

The objectives of this chapter are to:

- identify recent significant pieces of Federal legislation and regulations related to the provision of public information.
- assess the potential applications, limitations (restraints upon the legislation or regulation), contradictions (provisions conflict with other statutory or administrative law), gaps (areas where the provisions of the legislation or regulations do not apply), and ambiguities (unclear provisions and areas where key terms have not been defined).
- report on a literature review of studies which have examined these pieces of legislation and regulations.
- analyze the legislation and regulations based on their effects on Federal government producers and disseminators, and users of public information.
- develop recommendations for further revisions to existing legislation and regulations.

For the purpose of this chapter, the term "legislation" includes significant public laws being considered for enactment as well as those already enacted; and the term "regulations" includes administrative law adopted and proposed by the Executive and Legislative branches. The specific legislation and regulations discussed in this section are:

- Joint Committee on Printing's proposed regulations and guidelines of June 1984
- PL91-345, PL93-29[section 802], National Commission on Libraries and Information Science

- PL95-220, Federal Program Information Act
- Title 41, United States Code, National Audiovisual Center
- PL96-511, Paperwork Reduction Act of 1980
- Office of Management and Budget's Regulations
- Title 15 of the United States Code (NTIS)
- Title 44 of the United States Code (GPO)

This chapter contains four elements: (1) a summary of each public law or regulation, (2) significant studies which have examined that law or regulation, (3) a comparison of policy issues among these examples, and (4) recommendations for revisions of the laws and regulations so that the potential conflicts, gaps, and ambiguities can be addressed and resolved.

The Literature review is based on an online search of the data bases identified in Appendix 2-3 and a supplementary manual search of appropriate bibliographies and indexes. For a study to be reviewed in this chapter, it must meet three criteria:

- analyze one of the eight laws or regulations in terms of its effects on the provision of public information.
- state a specific thesis or offer recommendations.
- be published since 1978.

The literature review section of for each regulation or piece of legislation will provide the name of the author(s), the title of the study, the method of analysis, intended audience, thesis, and recommendations (the complete citations of all works are listed in the bibliography). These are the same points addressed in in studies reported in Chapter 2.

The JCP Printing and Binding Regulations/Guidelines

The Joint Committee on Printing has set policy formally through regulations but has also developed information policies and procedures informally through letters and other means. For example, in March 1977, Senator Howard W. Cannon, chairman of the JCP, wrote a letter to the Public Printer granting authorization for the Government Printing Office's micropublishing program and for conversion to microfiche. However, the inclusion of microfiche in the sales program was expressly prohibited (Hernon, 1981, p. 54).

The Printing and Binding Regulations of the JCP were last revised in April 1977. Believing that recent improvements in printing technology and procedures had made these regulations outdated and that formal and informal regulations enacted since then should be consolidated, Augustus Hawkins, on November 11, 1983, as Chairman of the JCP, proposed a revision. The JCP, then, requested public comment on the draft regulations.

A few months earlier (June 23), the Supreme Court declared, in INS vs. Chadha (1983), that the legislative veto was unconstitutional. The proposed regulations therefore attracted wide attention and controversy about whether all the provisions were binding on the Executive Branch. Those provisions actually specified in Title 44, United States Code, are binding; however, those provisions based on JCP interpretations were subject to challenge.

Based on the comments received, the JCP revised the 1983 document and reissued it on June 26, 1984 (Congressional Record, pp. H7075-H7079). No longer called regulations, the new guidelines supposedly outline a suggested policy while not impinging on the the issue of the separation of powers clause of the Constitution. One branch of Government, therefore, does not dictate policy to another.

Table 3-1 offers a summary of those major provision of the guidelineswhich affect the provision of public information by the Federal government. The status of the proposed guidelines, as of December 1984, is uncertain. Various spokespersons for both the Executive and Legislative Branches have characterized the guidelines as "withdrawn," "stalled," "on active hold," and "still under consideration." The JCP, in the upcoming session of Congress, may address the guidelines. On the other hand, the JCP may not consider them, especially if Committee members foresee conflict with the Executive Branch which would result in further erosion of Congressional power. The appointment of the chair of the JCP, with the new Congress, may well signal if the guidelines will be considered and if the JCP can regain power within both the Executive and Legislative branches. According to one account,

> it appears that any extension of Joint Committee powers, and any consequent greater access to government documents and information, will await a different administration. In the meantime, ground may well be lost as agencies farm out ever more of their publications to firms not subject to reporting and dissemination requirements -- and as publication in nonprint forms tends to escape the requirements now placed on the control of print publication. ("Joint Committee on Printing: New Regulations Stalled," 1984, pp. 1980).

TABLE 3-1

SUMMARY OF LEGISLATION OR REGULATIONS

Name of Legislation or Regulations	Federal Agencies affected	Topics covered	Key Issues
GPO Printing and Binding Regulations and Guidelines (1984)	applies to all 3 branches of Government and charges a senior official in each department to carry out the information management activities defined in Paperwork Reduction Act	role and responsibilities of each department for efficiency and coordination of printing and dissemination bibliographic control over printing. standardization of printing formats and media. role of Sudocs as disseminator role of depositoty libraries as disseminators of public information to end users sales and distribution of government publications definition of government publication as "information to which printing procedures have been applied, created by employees or officers of the United States government in the course of their offcial duties, or created by contractors of the United States government where the Government has retained control or rights to the information, for distribution to departments or to the public."	planning and coordination of printing and dissemination of public information--- its impact on availability of information to the public bibliographic control over government publications--- its impact on accessibility of information effects of standardization of printing formats and media on the accessibility of information. role of Sudocs as disseminator --- its effectiveness. role of depository libraries as disseminator-- its effectiveness vagueness of definition of government publication
National Commission on Libraries and Information Science Act (1970)	NCLIS	establishment of a National Commission on Libraries and Information Science	optimum provision of library and information services

TABLE 3-1
(Continued)

Name of Legislation or Regulations	Federal Agencies affected	Topics covered	Key Issues
National Commission on Libraries and Information Science Act (continued)		assessment of informational needs of various segments of the society	informational need assessment
		appraisal of current practice in library and information services	evaluation of effectiveness of current library operations
		function of the Commission including its advice to to President and Congress	development of national information policy
		membership of the Committee	fair representation of various segments of
Federal Program Information Act (1977)	applies to all Federal agencies which provide Federal assistance programs	identification of all existing Federal programs and creation of a Federal Assistance Information Data Base and its printed catalog.	efficient and regular distribution of current public information
		dissemination of such information through different media, i.e., data base and printed catalog.	dissemination of public information through electronic media ---- its impact on accessibility of public information
		role of and responsibilies of OMB for compilation and and dissemination of public information	role of OMB as disseminator --- its effectiveness
		sales of public information to the public at a reasoble cost.	sales of public information stored electronically
		contracts with private organizations for dissemination of public information stored on electrical media	
		role and responsibilities of each Federal agency for reporting information on Federal assistance programs to the OMB	

TABLE 3-1
(Continued)

Name of Legislation or Regulations	Federal Agencies affected	Topics covered	Key Issues
National Audiovisual Center (1969)	applies to all Federal agencies producing audiovisual products	management and dissemination of audiovisual resources	management and dissemination of these records serve as central clearinghouse compilation and publication of catalogs development of criteria, terminology, and practices for the cataloging and indexing of Federal audiovisual resources
Paperwork Reduction Act (1980)	Executive Branch and independent regulatory agencies	establishment of an Office of Information and Regulatory Affairs and a Federal Information Locator System	management and control of Federal information
		minimization of the Federal paperwork -- 25% reduction in the reporting burden on on the public	paperwork reduction on the public, businesses, and State local governments
		role of OMB for administrating general information policy, information collection requests, clearance, and other functions related to paperwork reduction	Federal information collection-reporting cycle needs and priorities of collection requirements
		establishment of a government-wide audits of all major Federal information systems	quality control of Federal information
		elimination of duplicate information collection requests	efficient collection of Federal information
		integration of information management practices and identification of initiatives to improve productivity	standardization of information processing activities
		development of a program to enforce Federal information processing standards	

TABLE 3-1
(Continued)

Name of Legislation or Regulations	Federal Agencies affected	Topics covered	Key Issues
Office of Management and Budget Directives (see text of Chapter for list of directives)	Executive Branch and independent agencies	management of printing and publishing programs and elimination of unnecessary publication	criteria used in making decisions vagueness in definitions of key terms balance of monetary with social good role of OMB in collection and dissemination of public information need for agencies to justify publication and printing to OMB need need to balance economy in Government with other factors need to monitor, review, control Federal printing and publishing
National Technical Information Service (15 USC 1151-1157) (1970)	all Federal agencies and independent establishments	functions of the clearinghouse general services offered programs and services to be self-sustaining target groups served	types of information collected and disseminated (and the format specified) mandate to be self-supporting relationship to other official disseminators declassification and release of information useful to business and industry

TABLE 3-1

(Continued)

Name of Legislation or Regulations	Federal Agencies affected	Topics covered	Key Issues
Title 44 and Proposed Amendments (H.R. 4572) (1978)	all Federal agencies and independent establishments	(major topics covered in H.R. 4572) modernization of GPO and creation of NPO	centralization of the Federal government's printing and publishing programs-- role of GPO
		creation of a commission to shape national information policy	accessibility of public information
		Government-wide coordination for effective and efficient provision of public information	role and relationship between public and disseminators
		creation of a centralized indexing system for public information	impact of new technology on Federal printing and dissemination systems and on organizational structures
		promotion of the provision of public information through the depository library program	role of the depository library program-- the issue of Federal fiscal support for depository libraries
		explanation of congressional oversight and control over Federal information policy	incentives and enforcement tools for Title 44
		pricing of government publications	role of the marketplace in the provision of public information— is it an economic good or a social good?

Assessment of the Proposed JCP Guidelines

Potential Applications:

- to increase the standardization of Government printing and bibliographic information.
- to embrace new developments in information technology not covered by the April 1977 regulations.
- to promote cost-efficiency through coordination of publishing programs for various departments and agencies.
- to provide a framework by which the JCP could oversee and review departmental printing and publishing activities.
- to encourage departments and other Federal bodies to increase their cooperation with the Superintendent of Documents' bibliographic control effort.
- to extend the definition of publication to embrace new technologies.
- to promote public use of, and access to, government publications through the depository library, e.g., to post signs indicating that depository publications can be used at no charge.
- to encourage cooperation between depository and non-depository libraries in the same area in such a way that the latter may house certain publications for depository libraries, and provide service and access comparable to that provided by the depository itself.

Limitations:

- the JCP is a "staff-run Committee;" the staff "has virtually total control over what happens" (Munro, 1984).
- guidelines can be accepted or rejected as each department or agency in the three branches of Government sees fit; there is no enforcement provisions.
- the guidelines do not provide adequate financial and personnel resources for the JCP or GPO to administer them.
- the JCP traditionally looks at printing as opposed to the life cycle of the information product (see Chapter 4)
- there is a perception, even within the Legislative Branch that the JCP is unable to control printing and that it is "antiquated." Spokespersons for both the Executive and Legislative branches referred to the JCP as linked to the past and unable to deal with the present or future.

- the JCP cannot require an agency to produce a title which that agency does not want to publish. Any agency can decide to discontinue a title for political or any other motives.
- the JCP is an oversight committee, while most other joint committees are study bodies -- they explore issues and report on their findings.
- information created with appropriated funds "shall not be offered for initial idstribution to private parties." "However, Chadha has forced the elimination of waivers and any mechanism for JCP to enforce this policy (Schwarzkopf, 1984, p. 440).

Contradictions:

- OMB views the guidelines as not having a statutory basis; the JCP, however, regards them as drawing together existing administrative law and as following the intent of Title 44, United States Code.
- on one hand, in an attempt to promote cost-efficiency in provision of government information, the guidelines allow the JCP to oversee departmental activities related to printing and publishing. This increased monitoring of agency publication and printing is evident from the stipulation that Federal agencies submit annual report outlining, among other things, the number and types of publications, the anticipated distribution methods, and even the titles of all publications if a private sector publisher is used. In light of this, it is very likely that, if the guidelines are implemented, agencies will reduce the number of government publications which they produce. The result would be a reduction in the level of available government information.
- on the other hand, the JCP attempts to increase the level of accessibility of government information by (1) providing the depository library with all government publications,(2) posting a sign in the depositoty library stating that government publications can be used at no cost, and (3) allowing the depository library to share its government publications with other libraries.
- the JCP abandoned regulations for guidelines, but did not significantly alter their substance. Except for those instances where the directives conform to the provisions of Title 44, the Executive branch may not feel obligated to adhere to administrative law which the JCP attempts to formulate.

Gaps:

- clearly, the Federal departments and agencies which produce public information are the intended targets of the guidelines. In short, the JCP introduced guidelines supporting the "supply side" of government publications. Thus, Title V.6, notice of public access and service for depository libraries, and Title V.7, sharing collections of a regional depository library, are not well-balanced with the rest of the text, since these two clauses deal with the "access side" of government publications.

- from the point of view of producers, it is assumed that the role of the depository program as a disseminator of government publications is effective and efficient. In reality, however, there are a number of issues yet to be solved regarding the role of the depository program as an effective and efficient disseminator of government publications.

- the guidelines "do not mention the National Technical Information Service (NTIS) which was given statutory authority over Government publishing and information activities in the area of scientific and technical information when an outdated Printing Act of 1895 (Title 44) could not accommodate requirements in that area" (Schwarzkopf, 1984, p. 441.

Ambiguities:

- the term "government publications" as used in the guidelines means "information to which printing processes have been applied, created by employees or officials of the United States government in the course of their official duties, or created by contractors of the United States government where the Government has retained control or rights to the information, for distribution to departments or the public." This definition of government publications is too broad. "Distribution" means the dissemination of government publications or information, while the term "printing" eliminates the distinction between copying, duplicating, and printing, and is meant to include all systems, processes, and equipment used to plan and develop an original reproducible image. These and other definitions contained in the guidelines increase the scope of printing activities falling under the jurisdiction of the JCP and attempt to close a number of loopholes where, in the past, agencies have attempted to escape the control of the JCP. Nonetheless, questions over the interpretation of these and other terms are still bound to be raised -- especially after the guidelines are passed and the various agencies must deal with them.

- the definition appears to eliminate audiovisual materials and "a significant amount of contract and grant materials" (Schwarzkopf, 1984, p. 440).

- the guidelines "still retain the imperative 'shall' in all sections. Some provisions are based on specific wording in Ttitle 44, and 'shall' is properly used. However, many other provisions are based on JCP interpretations which are subject to challenge, and these have not been changed to 'should'" (Ibid.).

- "What complicates the matter is that many of the 'shall' provisions are based on the outdated 1895 Printing Act, or other outdated amendments which have been disregarded for years by agencies with JCP complaisance. For example, section 501, Title 44 that all Executive, Legislative, and Judicial printing shall be performed by GPO (with some exceptions); section 1701 that all distribution shall be performed by GPO; section 1710 regarding the 'comprehensive index' of government publications; and section 1121 that agencies in the District of Columbia should procure their paper and envelopes through GPO (and meanwhile GSA covers the rest of the country" (Ibid.).

- Title V.3 states that data base tapes, microforms, and online access to govenment information "may be sold by the Superintendent of Documents in accordance with the pricing formula for publications offered for sale."

- many officials within both the Executive and Legislative branches associate the JCP with "traditional printing." It is difficult for them to accept the JCP in a next context -- oversight of government information, regardless of format.

- the definition of "printing environment" is extremely broad and can include but is "not limited to departmental printing plants, duplicating centers, copier centers, graphics, facilities, computer centers, distribution centers, and offices." Both the terms "printing driver tapes" and "publishing data tapes" merit definition, "since these along with 'on-line access to Government information ... [purportedly] may be sold by the Superintendent of Documents'" (Schwarzkopf, 1984, p. 440).

- the JCP can set administrative law formally and informally; however, the informal method (e.g., through letters) does not invite public comment.

McClure (1984b)

Title Proposed Regulations from the Joint Committee on Printing: Patchwork Remedies for Complex Problems

Method: Opinion Essay

Audience: Federal Government, Private Sector, and Library Community

Themes:

- the article analyzes the November 1983 regulations and reprints both the original and June revision.

- the author questions the extent to which the JCP has the legal basis for "regulating" Executive agencies.

- the proposed regulations demonstrate the intent on the part of the JCP to meet its statutory responsibility and expand its mandate. The regulations would increase the JCP's control over the Government's printing, and establish clear lines of reporting and data gathering for the monitoring of government publication programs.

- the procedures for enforcing these regulations are not outlined. The regulations exemplify a simplistic stance for dealing with the complicated issue of public access to public information.

- improved access to public information will not result, by itself, from simply creating an additional set of patchwork regulations.

Recommendations:

- develop coherent national information policies for all interested participants in Federal printing and information dissemination.

- coordinate, plan, and evaluate new information handling technologies for the production, bibliographic control and dissemination of Government printing and information.

- establish formal goals and objectives for the depository library program so that program effectiveness can be measured.

- develop procedures for the enforcement of the regulations.

New Title 44 Regulations under Fire (1984)

Title: New Title 44 Regulations under Fire

Method: Report Article

Audience: Library Community

Themes:

- the basic issue regarding the new regulations proposed by the JCP appears to be the conflict between the position taken by the Congressional oversight committee to expand its role and the Reagan administration's determination to dismantle bureaucratic machinery and reduce Government spending for non-military purposes.

- the JCP's proposals to bring about greater public access to government information is seen by its opponents as doing just the opposite, by freezing out the private sector and wielding new and more stringent control over the publishing output of every Government entity.

- on the other hand, the proponents of the regulations point out that closing down Government printing plants around the nation would provide new business opportunities to other stakeholders in the information sector.

Recommendations:

- include nonprint materials among those provided to depository libraries.

- require JCP approval before publication by a private firm.

- require materials produced by other stakeholders to be disseminated to depository libraries.

- adhere to ANSI standards for publication format.

- provide full bibliographic identification for all source material.
- provide archival copy of all publications to the Library of Congress and the National Archives.

Selected Impacts of the Guidelines

Table 3-2 includes a summary of the impacts from the proposed JCP regulations on the Federal government's provision of public information.

National Commission on Libraries and Information Science

Established in 1970, the National Commission on Libraries and Information Science (NCLIS) provides "advice, expertise, and assistance to the Executive and Legislative branches of the Federal government, as well as to organizations and agencies in both the public and private sectors nationwide" (National Commission on Libraries and Information Science, 1984, p. iii). It attempts to be "an objective advisor on national library and information policies and plans" (Ibid). One activity or area to question is the extent to which NCLIS has supported and stimulated research on the library and information needs of the American people, and achieved national consensus on goals, policies, and the need for planning for library and information services.

NCLIS has set three major objectives for the present decade:

- the development of specifications for library legislation
- improving the dissemination of Federal information
- improving library and information services through resource sharing and applications of technology (Ibid., p. 7).

TABLE 3-2

SUMMARY OF IMPACTS OF THE LEGISLATION OR REGULATIONS

Name of Legislation or Regulations	Impacts			
	Economic	Technological	Political	Social
JCP Printing and Binding Regulations and Guidelines (1984)	efficiency of publishing programs sales of printing plates, final proofs, databases microforms, and online access. (return on investment?)	standardization of publication formats extended definition of government publishing to technological applications bibliographic control of public information	centralization of Federal publishing programs tighter control over provision of public information effectiveness of policy guidelines as opposed regulations— role of JCP and GPO to other branches of Government (issue of separation of power)	access to public information (effects on availability and accessibility of public information) resource sharing between the depository and other libraries
National Commission on Libraries and Information Science Act (1970)	efficient use of library and information services Commission's authority to accept contributions to carry out its functions	role of libraries and information centers as links in national communications networks	Federal government's cooperation with state and local agencies role and responsibilities of HEW dept. in administering necessary services for the Commission role of the Commission for developing national information policy authority of the Commission to contract with any public or private agency to carry out its function	improved provision of library and information services to the public meeting the information needs of the public adequacy of library services to achieve national goals evaluation of library policy and service--- its effectiveness evaluation of library and information science programs--- its educational impacts

TABLE 3-2
(Continued)

Name of Legislation or Regulations	Impacts			
	Economic	Technological	Political	Social
National Commission on Libraries and Information Science (continued)			members of NCLIS will be appointed by the President	
			appropriateness of the Committee as an independent agency to accept contributions	
Federal Program Information Act (1977)	efficiency of disseminating public information through electronic media	application of computer technology for provision of public information	responsibility of each agency in reporting public information to OMB	user fees to access public information
	sales of public information stored on electronic media to the general public	role of private organizations as disseminator of public information data base, e.g, telecommunications, computer software,	effectiveness OMB as compiler of public information	role of depository library for dissemination public information electronically retrievable
	contracts with private sectors to obtain computer time-sharing services		satutory changes necessary to further develop dissemination methods using modern telecommunications technology	
National Audiovisual Center (1969)	efficiency of audiovisual services		centralization of bibliographic control and disssemination of Federal audiovisual resources	public access to Federal audiovisal resources

TABLE 3-2
(Continued)

Name of Legislation or Regulations	Impacts Economic	 Technological	 Political	 Social
Paperwork Reduction Act (1980)	cost of collection-reporting process distinction between public goods and private goods -- where to draw the line cost of reporting to the government by the public	establishment of a Federal Information Locator System development of a program to enforce Federal information processing standards	degree of "burden" differ among public and business -- how to distribute an arbitrary 25 % cut decision of who reports what and by what methods	reporting requirments for the public provision of public information to industry, interest groups, and private citizens -- its standardization
OMB directives (see text for a list of them)	cost of the production formats in which information will appear reduce costs of Government printing and publishing	formats in which information will appear	relationship of public and private sectors decisions about what to publish and in which format centralizing information policy development	balance of economic and social good widening information gaps defining concept of dissemination public information
National Technical Information Service (15 USC 1151-1157) (1970)	Congressional mandate to be self-supporting unequal ability of public to pay NTIS fees to access information	inclusion of machine-readable products and creation of a software program	role as competitior to other official disseminators negotiation of national security environment to get information declassified for use by business and industry share military and and other information with the appropriate agency	availability of scientific, technical, and other information to the public collection and dissemination of report literature from other countries lack of uniform quality control for all source material available for dissemination

TABLE 3-2
(Continued)

Name of Legislation or Regulations	Impacts			
	Economic	Technological	Political	Social
National Technical Information Service Continued)				*self-sustaining operations create access problems for some segments of the population
Title 44 and Proposed Amendments (H.R. 4572) (1978)	pricing of government publications --full/partial cost recovery or free? cost of new technology Federal fiscal support for the depository library program role of OMB in reviewing agency budget requests type of govern-publication to be subsidized	effects of new technology on the provision of public information and organizational structure and labor effects of new technology on traditional definitions such as "duplicating," and "printing" impacts of automation on the form, type and medium of public information— issues of compatibility and	centralization of Federal information policy incentives and enforcement tools for Title 44 relationship of title 44 to other laws and regulations designation of a government publications manager in each Federal agency role of Congress for oversight and control over the production and dissemination of of public information	accessibility of pubic information relationship between public and private disseminators role of the depository library program nature of public information— is it a social good or an economic commodity?

Both the second and third objectives are pertinent to all four chapters of this report.

Table 3-1 summarizes the major provisions of the Act which established NCLIS. The following discussion focuses solely on the legislation itself. An examination of the feasibility of NCLIS' goals and objectives is beyond the scope of this report. Nonetheless, it can be suggested that research must go beyond an analysis of the current and potential use of libraries. It must cast libraries in the context of the information environment. The position of NCLIS is that "citizens must have the necessary knowledge, skills, and access to information to function effectively in the workplace as well as in all other aspects of their lives" (Ibid., p. 15). In this context, certain questions can be raised:

- what assumptions does NCLIS make about information and the ability of libraries to respond to these needs?
- what types of information needs do and should libraries fulfill?
- to what extent do people (citizens and others) turn to a library for the satisfaction of an information need?
- how effective are libraries as a resolver of information needs?

Assessment of the Act

Potential Applications:

- to establish a National Commission on Libraries and Information Science.

- to assess the information needs of the public, including those of "rural areas, economically, socially, or culturally deprived persons."

- to devise the means by which those information needs may be met through various types of libraries and information centers.

- to evaluate the effectiveness of "current library and information science programs."

- to develop overall plans for meeting library and information needs of the public and to make recommendations to the President and Congress.

- to promote research which will improve library and information services.

- to submit an annual report on the Commission's activities to the President and Congress.

Limitations:

- since Commission members represent different constituent groups, they conceivably might these groups and not the general social good. The influence of the private sector on the Commission may be noteworthy.

- "NCLIS has neither the carrot of funding nor the stick of regulatory authority needed to make recommendations stick" (Mason, 1983, p. 119).

- "NCLIS has historically been funded at such a low level that many of its resources are used simply to continue its own existence" (Ibid.).

- "one of the continuing anomalies of the Federal government is that a small agency such as NCLIS has the same reporting responsibilities as a large agency like the Department of Education. As a result, NCLIS has never really received the 'critical mass' of funding that would permit it to commit a significant percentage of its funding to program-related activities" (Ibid.).

- NCLS is responsible for "planning and policy making, a job that it can accomplish only through negotiation and consensus building" (Ibid., p. 120). "Even if NCLIS were funded at an adequate level, the concept of centralized planning probably needs to be reexamined. Few of the recommendations made by NCLIS have been implemented on a broad scale" (Ibid., p. 119).

- the lack of references to NCLIS throughout this report, specifically with regard to the information needs and gathering strategies of the general public indicates that NCLIS has considerable work to do before its objectives can be fulfilled.

Contradictions:

- NCLIS was established as "an independent agency within the Executive Branch." However, Section 4 states that the Commission shall have authority to accept contributions, "grants, gifts, or bequests of money." A question to raise is "Why does this independent agency needs to accept contributions?"

- our discussions with various officials in the Executive and Legislative branches indicated that NCLIS is a strong supporter of OMB and its directives on economy in Government and not an objective supporter of the interests of libraries and enhanced access to public information.

Gaps:

- while the Act originally stated that NCLIS would assess the information needs of rural areas and economically, socially or culturally deprived persons, it was not clear whether this would include the information needs of the elderly. However, upon the enactment of the Older American Comprehensive Services Amendments of 1973, the insertion of "(informational needs) of elderly persons" was made into the original Act (PL93-29, Section 802, a).

- the Act was also amended to provide membership on the Commission to at least one other person who would be knowledgeable of library and information services and science, and the needs of the elderly" (PL93-29, Section 802, b).

Ambiguities:

- section 2 states that "the Congress hereby affirms that library and information services adequate to meet the needs of the people of the United States are essential to achieve national goals..." The term "national goals" was left undefined.

- in the same section it is stated that the Congress affirms that "the Federal Government will cooperate with [appropriate agencies] in assuring optimum provision of library and information services." While one might assume the term "optimum provision" is similar to the term "optimum allocation" in the field of modern economics, such is unclear.

- section 5 states that NCLIS will promote research activities to improve the "information handling capability as essential links in the national communications networks." One might wonder what the term "national communications networks" refers to. Would it be a national network of libraries and information centers or something else?

Literature Review:

No studies met the previously stated criteria.

Selected Impacts of the Act:

These are summarized in Table 3-2.

Federal Program Information Act

The Federal Program Information Act was enacted on December 28, 1977, to provide for the efficient and regular distribution of current information on Federal domestic assistance programs. Prior to 1977, similar bills had been introduced and reported favorably in the Senate during four consecutive Congresses (91st to 94th). However, in each case, the legislation was not fully considered in the House and was never enacted.

The enactment of the Federal Program Information Act was faciliated by two factors. First, while there has been a rapid proliferation of Federal assistance programs available to the general public since 1960, relatively little legislative effort had been made to announce these programs to intended beneficiaries. Second, in the absence of legislative measures to provide regular distribution of current information on these assistance programs, there was a growing trend for states and cities to open their Washington offices in an effort to obtain up-to-date information on the programs. The Congress, particularly the Senate, became concerned with this trend mainly because not all states and cities could afford to employ full-time professionals to seek information in the District of Columbia.

On May 17, 1977, Senator Robert C. Byrd introduced a bill requiring the Director of the Office of Management and Budget to establish a data base containing comprehensive information on all Federal domestic assistance programs retrievable through computer terminals and to publish a printed catalog of these programs, based on information from the data base. The purpose of the bill was to increase the availability of information about Federal domestic assistance programs to the public. On December 17, 1977, the legislation was enacted (See Table 3-1 for a summary of the major provisions of the Act).

Assessment of the Act

Potential Applications:

- to identify all existing Federal domestic programs.
- to create a Federal Assistance Information Data Base (FAIDB)
- to prepare a printed catalog based on the FAIDB.
- to provide regular distribution of current information on Federal domestic assistance programs to the general public by means of the FAIDB and a printed catalog.

Limitations:

- under this Act, "each Federal agency shall furnish to the Director [of the Office of Management and Budget], at such times as the Director may determine, current information on all domestic programs administered by such Federal agency." The issue here relates to how effective the OMB is in coordinating intergovernmental reporting.
- further statutory changes would be necessary to develop and implement fully the kind of information system defined by the Act: "the Director, notwithstanding any other provision of law to the contrary, when he determines the efficiency of the information system .... requires it, may enter into contracts with private organizations to obtain computer time-sharing services..."

Contradictions:

- section 5 of the Act states that the Director of the Office of Management and Budget "shall establish and maintain a computerized system to provide access to the data base .... [and] shall insure that the information available under this Act is made available to the public at a reasonable price." It is implied that the public will pay a fee to gain access to information contained in the data base.
- however, it is clearly stated in Section 6 (2) that "there are authorized to be distributed, without cost, catalogs to ... Federal depository libraries and, and other local repositories designated by the Director."
- thus, the same piece of information identified by the Act could be chargeable depending on where it is stored.

Gaps:

- the data base would be updated "on a regular basis," while the catalog would be published each year with supplements. Although one is not sure about the frequency of updating the data base, it is reasonable to assume that the information in it is more current than that found in the printed catalog.

- the catalog contains "all substantive information...that is in the data base." This indicates that not all the information in the catalog would be identical to that in the data base.

Ambiguities:

- the information available under this Act may be made available to the public at a "reasonable price." The question is, of course, what is reasonable and how it would be decided.

- "the Director .... shall provide for the widespread availability of information contained in the data base, by computer terminals wherever available." One might wonder if the Government would have direct access to the data base through a computer terminal via private telecommunications facilities and commercial data base vendors.

- Under the Act, one can expect to obtain "expert information" concerning Federal Assistance Programs, but "this does not include provision of conventional public information services." The distinction between "expert information" and "conventional public information" is unclear, and neither term is defined in the Act.

Literature Review

No studies meeting the criteria already specified were discovered.

Selected Impacts of the Act

Table 3-2 identifies the impacts resulting from the Act.

National Audiovisual Center

Established in July 1969 as part of the National Archives and Records Service, the National Audiovisual Center assists Federal agencies with bibliographic control and dissemination of their audiovisual products (slide sets, audiotapes, filmstrips, multi media kits, videocassettes, etc.). The clearinghouse is responsible for maintaining a master data file of audiovisual materials produced by the Government, and it produces reference tools to alert the public of its products and services. The clearinghouse "serves as a central distribution point for the sale, rental, and, under limited conditions, free loan of these products to the public and Federal agencies" (41 CFR 101.1304).

Potential Applications:

- management and dissemination of audiovisual records.
- the objective of the management of these records is to ensure "the effective creation, maintenance, use, and disposition of audiovisual and related records" (41 CFR 101-11.1302).
- serve "as a central information source to the general public and Federal agencies concerning the availability of Federally produced or sponsored audiovisual products" (41 CFR 101-11.1304).
- compile and publish catalogs on the products in its collection.
- develop criteria, terminology, and practices for the cataloging and indexing of audiovisual resources.

Limitations:

- the Center lacks an enforcement mechanism to ensure that it is aware of and receives all Federally produced audiovisual products, and that other agencies accept its cataloging and indexing practices.
- the Center receives whatever is sent and does not exert quality control.
- turnover in the position of liaison affects the ability of Federal agencies to comply with the Center's requirements (each agency is supposed to assign one of its offices to oversee the management of its audiovisual activities.

Contradictions:

- the Center distributes public information by format, while other Federal disseminator is by information content or user demand.

Gaps:

- the Center cannot determine all products issued and ensure receipt of them. It must rely on agency compliance with OMB Circular A-114 and the Standard forms 202 (Federal Audiovisual Production Report) and 203 (Annual Audiovisual Report).
- the liaison may not be fully aware of the scope of audiovisual production within the agency.

Ambiguities:

- with the expansion of other clearinghouses into non-print formats, the Center may well not serve as the central clearinghouse for Federally produced audiovisual products.

Literature Review:

No major studies have analyzed the Center and the extent to which it meets stated goals and objectives. The literature merely identifies products and services which the Center provides, but does not assess the implications of the President's 1981 moratorium on the creation of new periodicals, pamphlets, and audiovisual products.

Paperwork Reduction Act

The Paperwork Reduction Act of 1980 was enacted on December 11, 1980, to reduce paperwork and enhance the economy and efficiency of the Federal goverment by improving Federal information policy making and reducing the paperwork burden on the public. The original bill, which was introduced in the House on March 24, 1980 (H.R. 6410), followed the recommendations developed by the Federal Paperwork Commission in 1977. The primary objectives of the bill were to:

- reduce the information processing burden on the public and private sectors
- expand and strengthen Federal information management activities
- decrease the paperwork burden on individuals, businesses, state and local governments, and others outside the Federal government.

To accomplish these objectives the bill created a new Office of Federal Information Policy within OMB which would be responsible for Government-wide information policy and oversight. In addition, the bill created a Federal Information Locator System, which would contain descriptions of all information requests made by Federal agencies to the public. The system would be used to identify duplication in existing or new reporting requirements, and to locate existing information that might meet the needs of any agency that wants to collect new data (Congressional Record, 1980, pp. 6211-6212).

On November 19, 1980, the Senate considered and amended H.R. 6410. The major amendment effort was directed toward protecting intelligence and national security information from falling within the scope of the bill. The House concurred in the Senate amendments and the bill was enacted on December 11, 1980.

While OMB has reported reduction in the paperwork burdens on the public since the enactment of the Paperwork Reduction Act in 1980, limited progress has been made in other information resources management areas such as improving the acquisition and use of information technology, overseeing the Federal statistical system, and developing uniform information policies (General Accounting Office, 1983b). The Act provided the Office of

Information and Regulatory Affairs (OIRA) with neither the authority nor resource authorization for performing reviews of regulations, except for assessing compliance with the Act's objectives for reducing paperwork.

To strengthen the Act, a set of amendments were introduced into the Senate on March 15, 1984 (S. 2433). The major objectives of the amendments were to:

- clarify and strengthen the statutory power of OIRA,
- enhance congressional oversight powers
- establish Information Technology Fund combining Federal telecommunications and automatic data processing funds
- mandate a 25% reduction in paperwork, at the rate of 5% a year for the next 5 years (Congressional Record, 1984, pp. 2789-2793).

The amendments were approved by Senate Committee on Government Affairs on July 26, 1984, but the final passage of the amendments is still pending (December 1984).

The following analysis pertains largely to the original Paperwork Reduction Act of 1980 and not the more recent amendments, since the amendments have not yet generated a body of identifiable literature. Further treatment of the Act and OMB can be found in the subsequent section of this chapter devoted to the agency's directives on economy in the management of Federal information policies.

Assessment of the Act

Potential Applications:

- to establish within the Office of Management and Budget an Office of Information and Regulatory Affairs and a Federal

Information Locator System to serve as the authoritative register of all government information requests.

- to have OMB develop and implement Federal information policies and standards covering the reduction of Government paperwork burdens on the public, records management activites, the privacy of records on individuals, and the review of information collection requests.

- to charge the Director of OMB with: general information policy functions; information collection requests, clearance, and other functions related to paperwork control; statistical policy and coordination functions; records management; privacy of information functions; and automatic data processing and telecommunications functions, except those related to intelligence, and cryptologic or military activities.

- to have OMB establish, within one year, Government-wide audits of all major information systems and the Federal Information Locator System.

- to have OMB develop a schedule for the elimination of duplicate information collection requests within the Federal government, establish a system for integrating information management practices, identify initiatives to improve productivity in Federal operations using information processing technology, develop a program to enforce Federal information processing standards, and revitalize the standards development program.

Limitations:

- independent regulatory agencies and the Internal Revenue Service are exempt from the provisions of the Act.

- OMB will determine whether the collection of information is necessary. However, the independent regulatory agencies "may override OMB's disapproval ... by majority vote of its members or commissioners" (5 CFR 1320.19).

- the role of the OIRA as "the authoritative register of all government information requests" is ill-defined.

- responsibilities for information dissemination functions are inadequately addressed.

- OMB is not adequately funded or staffed to carry out all of its assigned responsibilities.

- OMB asserts that all information gathering regulations are subject to three year reviews. The question is whether each agency, in fact, is reviewed on schedule and whether

OMB has sufficient staff to carry out a detailed assessment.

- OMB must grant approval for the collection of information. Approval is based on the extent to which the information has "practical utility" (5 CFR 1320.4). The term "practical utility" means:

> the actual, not merely the theoretical or potential, usefulness of information to an agency, taking into account its accuracy, adequacy, and reliability, and the agency's ability to process the information in a useful and timely fashion. In determining whether information will have "practical utility," OMB will take into account whether the agency demonstrates actual timely use for the information either to carry out its functions or to make it available to the public, either directly or by means of a public disclosure or labeling requirement, for the use of persons who have an interest in entities or transactions over which the agency has jurisdiction. In the case of general purpose statistics or recordkeeping requirements, "practical utility" means that actual uses can be demonstrated (5 CFR 1320.7q).

This lengthy explanation does not rule out the need to collect duplicate information. It also uses the terms "actual timely use" and "actual uses" but defines neither. It can be assumed that, to be collected, information must have some immediate (as opposed to future) use.

Contradictions:

- OMB prohibits the collection of duplicative information. However, OMB recognizes that agencies need accurate, timely, and reliabile information. It is conceivable that an agency might have to collect duplicate information because the original information may not be reliable, valid, etc. The term "duplicate" merits clarification and should recognize the need for certain exceptions.

Gaps:

- senior officials within agencies are assigned to carry out specific responsibilites. Frequent changes in these positions as well as other factors may affect the ability of an agency to fulfill the requirements.

- except for independent regulatory agencies and the IRS, OMB can determine if information will or will not be collected. An Executive agency could ask OMB to reconsider its decision or could offer new reasons for why the information must be collected. There does not appear to be an effective appeals procedure which represents other stakeholders, e.g., the public, in Federal information policy.

- OMB operates within an information policy vacuum. Other Federal agencies are not effectively challenging the general course which OMB is setting. The JCP does not appear to be an effective force in the information environment. Two central issues are: "Will OMB fill the vacuum on a temporary or permanent basis" and "What are the implications of the OMB directives for the social good?"

Ambiguities:

- the primary emphasis of the Act is on information resource management; however, information resource management has been interpreted to include public access, bibliographic control, standardization, etc.

- OMB will make its decision about which information is necessary to collect based on certain general criteria. This one agency has tremendous actual and potential authority over the types of information gathered by the Government and the uses of this information. Where decision making rests upon the collection, production, and dissemination of public information, OMB exerts a significant influence or is a determining factor. Therefore, specific criteria, beyond those relating to economy in Government, must be developed.

- information, as used in the context of the Act and corresponding regulations, "means any statement of fact or opinion, whether in numerical, graphic, or narrative form, and whether oral or maintained on paper, magnetic tapes, or other media" (5 CFR 1320.7k). It can be assumed that statistical data comprise information. However, inclusion of the word "oral" greatly expands the concept of information and is exceedingly difficult to regulate effectively.

Literature Review:

General Accounting Office (1983b)

Title: Implementing the Paperwork Reduction Act: Some Progress, but Many Problems Remain

Method: Evaluation Report

Audience: Congress and OMB

Themes:

- OMB has reported substantial reduction in the paperwork burdens (a 29% reduction exceeds the Act's 25% reduction goal for 1983).

- however, limited progress has been made in other information resources management areas such as improving the acquisition and use of information technology, overseeing the Federal statistical system, and developing uniform information policies.

- limited progress was due, in part, to the emphasis given to regulatory reform activities, which diverted resources from the Act.

- a crucial decision contributing to the shortfalls in many of the Paperwork Reduction Act's tasks was assigning OIRA primary responsibility for the Administration's regulatory reform program.

- the Act provides OIRA with neither the authority nor resource authorization for performing reviews of regulation, except for assessing compliance with the Act's objectives for reducing paperwork.

Recommendations:

- identify specifically in the budget program and financing schedule the resources needed for timely and effective implementation of the Paperwork Reduction Act.

- assess the feasibility of applying a greater portion of the resources currently available to implement the requirements having statutory significance. The result of this assessment should be included in OMB's budget submission.

- direct OIRA to provide clear-cut guidance to the Federal agencies for implementing their responsibilities under the Act.

- direct OIRA to develop a plan for accomplishing tasks specifically requiring the involvement of the General Services Administration and the Department of Commerce.

- direct OIRA to make appropriate use of other agencies' expertise in accomplishing tasks required by the Act.

- direct OIRA to develop criteria for delegation of clearance authority to qualified agencies and work with the agencies so that the delegations can be granted.

Young (1981)

Title: The Impact of Paperwork Reduction Act of 1980 on ADP in

DoD

Method: Evaluation Report

Audience: Department of Defense, OBM, and General Services Administration

Themes:

- the Federal government is taking steps to confront and resolve its information resources management problems, as seen by the passage of the Paperwork Reduction Act.
- information resources management is a new concept for some officials within the Department of Defense, and it is neither uniformly defined nor well understood.
- the Act crosses organizational boundaries within the Department of Defense , and there is no clear-cut single agent assigned responsible for administration of the Act.
- the major areas of concern within the Department of Defense for implementing the Act focus on questions of authority, scope, and bureaucratic inefficiencies.

Recommendations:

the Office of the Secretary of Defense should:

- establish closer coordination among its offices directly involved with the implementation of the Act.
- plan to work closely with OMB, GSA, GAO, and Congress in shaping the implementation of the Federal information resources management program.
- take the lead in defining a uniform department-wide interpretation of the provisions of the Act.
- prepare an in-depth study on the implementation of information resources management in the Department.

Office of Management and Budget Regulations

The Office of Management and Budget (OMB) was established in the Executive Office of the President in 1970. OMB has as its assigned responsibilities:

- to assist the President in the preparation of the budget and the development of a fiscal program for the Executive Branch of Government

- to supervise the administration of the budget
- to assist the President in the effective and efficient management of the Executive Branch
- to advise the President on legislation
- to oversee the administration of the Paperwork Reduction Act
- to assist the President in the preparation of proposed executive orders and proclamations (*The United States Government Manual*, 1984, p. 82).

Given these responsibilities, a number of authors (see literature review section) have expressed concern about the ability of an agency concerned with efficiency and economic matters to oversee Government policies for the production and dissemination of information. They point out that it is difficult to balance activities calling for both the maintenance of an efficient Government and the provision of public information for the social good.

This section of the chapter examines the role of OMB in "controlling paperwork burdens on the public" (5 *CFR* 1320), with special emphasis on:

- Bulletin No. 81-16, "Elimination of Wasteful Spending on Government Periodicals, Pamphlets, and Audiovisual Products" (April 21, 1981)
- Bulletin No. 81-16, Supplement No. 1 "Elimination and Consolidation of Government Periodicals and Recurring Pamphlets" (October 9, 1981)
- Memorandum on Federal Information Centers (September 11, 1981)
- Circular A-114, "Management of Federal Audiovisual Activities" (April 13, 1978)
- Circular A-25, "User Charges" (September 23, 1959)
- Circular A-3, "Government Periodicals," which covers the Executive Branch's effort to implement 44 *USC* 1108 and to

OMB approve the publication of certain periodicals (May 18, 1972)

- Circular A-76, "Performance of Commercial Activities" (August 4, 1983)
- Review of Federal Publications -- Reform 88 (October 8, 1982)

Specific coverage of the Paperwork Reduction Act is treated separately.

Assessment of the Directives

Potential Applications

- to implement and administer the Paperwork Reduction Act and a program of information resource management.
- to eliminate costly, unnecessary, redundant, and superfluous publications.
- to create opportunities for the private sector to expand, develop, and assume publishing efforts.
- to determine the extent to which agencies publish and provide bibliographic control over these publications.

Limitations

- information which Federal agencies have gathered may not be published or if it is available, it may be issued in the most cost-efficient format. Therefore, the public may not receive needed information and in a format which they can effectively and efficiently use.
- Circular A-76 advances the policy of the Executive Branch on "commercial" activities performed for the Federal government and their impact on the Federal work force. Based on the circular, OMB has identified 14 categories to investigate for improved productivity:
    - automated data process
    - data handling
    - training
    - programs
    - audiovisual services
    - facilities, grounds, and utility management

  - accounts management
  - loan processing
  - architectual and engineering services
  - Federal library services
  - warehousing
  - food services
  - laundry services
  - mailroom and filing services
  - motor pool services

  Staff members of the libraries comprise one of the few professional groups scrutinized for improved productivity. Previously OMB and the Office of Personnel Management had attempted to reclassify and downgrade Federal librarians. Clearly these measures represent a lack of understanding of librarianship and raise issues about the efficiency of the private sector in maintaining ongoing library operations. Library collections, services, and management require sound planning and an ability to meet more objectives than those related to financial savings to Government. The selection of the 14 categories may well be arbitrary, if not discriminatory.

- the Federal information environment is too large for OMB to manage alone. However, no other agency is willing to challenge the OMB. Apparently the attitude is one of "wait and see;" "let's see if OMB makes some serious mistakes, and learn from these mistakes." Such an attitude demonstrates the political strength of OMB in the formulation and management of Federal information policies.

Contradictions

- the focus of the directives has been on periodicals, pamphlets, and audiovisual products. However, the application of the directives has extended to the entire publishing program of an agency.

- bibliographic control as practiced by OMB contradicts the JCP's interpretation of Title 44 and the proposed JCP guidelines.

- OMB and the JCP disagree on Federal information policy; OMB encourages the privatization of public information while the JCP seeks compliance with Title 44.

Gaps

- the economic (or monetary) good is addressed; the social good is only addressed in general terms. For both types of good, detailed criteria are not developed and related to decision making.
- by treating public information as a commodity rather than a social good, public access to this information diminishes. The Government is applying cost-recovery principles to more of the information which it considers making available. Further, toher stakeholders in the information sector are receiving more public information for dissemination.
- the OMB directives do not provide for enforcement of Title 44. OMB is the only Executive agency with a statutory basis for inter-agency coordination.
- OMB has not developed circulars for non-traditional formats (e.g., electronic systems). In fact, OMB is ignoring it when Executive agencies circumvent Title 44 and contract services to the private sector. In some cases, it seems that OMB is "encouraging" agencies to circumvent the letter, if not the spirit, of the Title.
- a vacuum exists in the formulation and management of information policy, in part because Congress does not want to challenge the Executive Branch and to see possible further erosion of its authority. Some officials from the Legislative Branch who were interviewed maintained that this may not be the appropriate time to "fight information policy battles."
- according to former Senator Abraham Ribicoff, "individual agencies which cannot describe in detail their publications policies and programs -- their size, their cost, their justification for existing -- are similarly incapable of deciding which publications are useful, which are propagandistic, and which serve no official purpose other than to seek to glorify their Federal agency" (Congressional Record, 1979). Indeed, budget cutting of agency publishing programs and the procedures which agencies must follow in alerting OMB of their publishing activities encourages decisions to be made solely or largely in terms of costs and not the public good.

Ambiguities

- key terms such as periodical, pamphlet, and audiovisual products are inadeqautely defined. The definition of periodical in 44 USC 1108 is complex and open to interpretation.

- the wording of Circular A-3 is "complex and indefinite" (Memorandum on Review of Federal Publications -- Reform 88, 1982, p. 12). At this time OMB is preparing a draft revision of this circular, which will cover periodicals as well as "nonperiodic publications, scientific and technical reports, grant publications, and professional journal page charge articles." The annual publication plans of agencies would be subject to OMB approval (Schwarzkopf, 1984, p. 444). Criteria for making publication decisions should take into account more than economy in Government. Adequate definitions must be advanced and the publication plans of Federal agencies merit close scrutiny.

- no definition of "costly, superfluous, and redundant publication" is advanced.

- Joseph R. Wright, Jr., Deputy Director, OMB, in the "Memorandum on Review of Federal Publications -- Reform 88 (1982), asserted that "use, not abuse" is the key phrase for determining the importance of a publication and its survivial. However, criteria related to "use" were not advanced.

- the concept of "efficient management of Federal information resources" is undefined.

- cost recovery management of public information assumes that the primary factors are financial. Lesser priority or value is assigned to the social good and other factors. For example, a pamphlet on social security coverage may enable some possible recipients to determine their benefits and filing procedures. Pamphlets conveying information on social security, infant care, health care, etc., may lead to a better quality of life.

- the assumption is that no duplication is to be permitted; if this is a false conclusion, how much duplication should be permitted before action is taken?

- issues of duplication versus reinforcemnt versus replication are not viewed in the context of the ability of the disenfranchized to get public information.

- although OMB is supposed to determine the extent to which agencies publish and provide bibliographic control over these publications, the agencies may not have prepared centralized inventories of their publications or have determined the extent to which they, in fact, publish.

- the Information Industry Association (IIA) maintains "that Cicrular A-76 does not address the issue of the Government providing commercial products and services in the market-place." With the availability of information in electronic format, the IIA is "concerned that Government agencies have attempted or will attempt to repackage information themselves in new forms or formats to provide information services to the public in direct competition with commercial vendors and developers" (DeMuth, 1984, p. 4).

- policy guidelines need to ensure that Federal agencies do not compete unfairly with other stakeholders in the information sector when they provide information products and services to the public. The problem is to create a proper balance among the stakeholders.

- the private sector maintains that the Federal government should rely on it for the dissemination of most public information.

- the current and future impact of these directives have not been fully analyzed. Under pressure to limit the amount of source material published, Government agencies may well seek alternative ways to disseminate information -- ways that require minimal expenditures of human and monetary resources. For example, agencies might seek private publication or prepare taped messages on particular subjects and make these available to anyone willing to place a telephone call. Anyone outside the local area might have to assume the cost of the call, especially in those cases where toll-free numbers are unavailable. An additional problem might be that if agencies do not revise their messages on a regular basis, callers might not receive the most up-to-date information (Hernon and McClure, 1984).

  This example, combined with the shift of publication from paper copy to microform and machine-readable output (see Chapter 1), might suggest that the Government is changing some of the methods by which it communicates to the public. Another implication is that the Government communicates more with the information-rich, those able to pay for information and be both articulate and forceful in their information requests to Executive Branch officials and Members of Congress (see Chapter 2). The Government is questioning its responsibility to provide information to the public free of charge and is examining which costs to pass along to users of public information. The claim that the information was originally produced with taxpayer dollars has not been a sufficient deterrent to the trend of reduced information flow to the mass public.

- OMB has defined public information as that:

> which is collected, produced or created by or for the Federal government, with Federal funds, primarily for the purpose of communicating with, educating or informing one or more segments of the

> public. The distinguishing characteristic of public information is that the agency actively seeks, in some fashion, to disseminate such information or otherwise make it available to the public" (45 Federal Register 38461).

This definition is exceedingly general and contains undefined words and phrases (e.g.,"produced," "primarily," "communicating with," "educating or informing," "actively," and "disseminate"). Federal agencies can interpret these anyway they choose, thereby blurring the distinction between stakeholders in the information sector.

- the establishment of a "reasonable" charge, for the use of a Government service from which "a special benefit" is received (A-25, p. 1), and the balancing of this charge against other criteria (e.g., actual costs, perceived use of the information, and the social good), is difficult to accomplish.
- "... the Government shall not start or carry on any activity to provide a commercial product or service if the product or service can be procured more economically from a commercial source." (Circular A-76 revised). Clearly, the emphasis is on economic and not other factors.
- a central issue relates to the extent to which information policy should be the domain of the Executive Branch and to the role of the Legislative Branch.

Literature Review

A number of authors have examined the impact of the regulations, memoranda, and circulars issued by OMB on the collection, production, and dissemination of public information. Given the extensive amount of repetition among these writings, this section will only review significant studies that are representative of the literature.

DeMuth (1984)

Title:	Memorandum for Senior Officials for Information Resources Management
Method:	Summary of Comments Which OMB Received to Its Notice of September 12, 1983, Soliciting Public Comment on the Development of an OMB Policy Circular on Federal Information Management

Audience: OMB (for use in preparing a draft circular on information resources management)

Themes:

- three issues listed for public comment generated the most comment and "controversy:" general principles of information resources management, competition with the private sector, and user charges for information products and services.

- the following issues received comment primarily from Government agencies: information processing standards, interagency sharing of data processing facilities: access to alternative facilities, cost accounting procedures for data processing, least overall systems life cost, software management, long-range planning process, microcomputer technology, end-user computing and office automation, information technology for data collection, security of automated information systems, maintenance of records about individuals, maintenance of Federal records, roles of suppliers, consumers, and managers of information technology, and avoiding development of redundant administrative and management systems.

Recommendations:

- OMB plans to take comments on these topics into account when it develops the draft circular on information resources management.

Florance (1984)

Title: Presidential Policy and Information Dissemination: An Analysis of the Reagan Moratorium on Government Publishing

Method: Survey and Case Study (Analysis of Government publications received by one library before and during the Reagan moratorium on the production of new pamphlets, periodicals, and audiovisual products).

Audience: Federal Government, Private Sector, and Library Community

Themes:

- examines the impact of the moratorium on the format and content of publications issued by the Department of Health and Human Services and sent to depository libraries during the publication freeze.

- examines the consequences of the moratorium on the library community and the users of these publications in depository libraries.

- the policy initiatives have had an unexplained impact in other areas; they have resulted in a cutback in depository distribution of scientific and professional publications. Further, publications aimed at special segments of the population (e.g., educators and physicians) have been curtailed.

Recommendations:

- the reduced availability of public information impedes the extent to which knowledge is advanced and restricts certain information to "financial and political elites. It is incumbent upon the communities which use government information to express their interest and concern in a continuing dialogue with those who control Federal information policy" (p. 282).

Gell (1981)

Title: The Ministry of Truth

Method: Report Essay

Audience: Library Community

Themes:

- most would agree with the principles of PL96-511, the Paperwork Reduction Act of 1980.

- however, OMB should not have unprecedented statutory authority to control the flow of Federal information. The impoundment of information should not be the way to achieve the goals of the Act.

- the control of information by a single entity, either public or private, is always dangerous.

- the future of libraries depends largely on the continuation of free flow of information.

Recommendations:

- develop specifications for new legislation in the library and information science areas.

General Accounting Office (1982)

Title: Federal Information Systems Remain Highly Vulnerble to Fraudulent, Wastful, Abusive, and Illegal Practice

Method: Evaluative Report

Audience: Congress and Federal Agencies

Themes:

- this report was requested by the Subcommittee on Government Information and Individual Rights.
- OMB Circular A-71, Transmittal Memorandum No. 1, is not sufficiently comprehensive to provide needed policy and guidance to Executive agencies.
- central agencies have not been effective in fulfilling their information security program responsibilities.

Recommendations:

- revise OMB Circular A-71, Transmittal Memorandum No. 1 to:
    - ensure a reasonable level of protection over personal, proprietary, and other sensitive information.
    - clarify the interrelationship between the Memorandum and policy and guidance on safeguarding information classified for purpose of national security.
    - clarify the instances in which Executive agencies must afford the same level of protection against unauthorized disclosure of personal, proprietary, and other sensitive information as they do to information classified for purposes of national security.
    - establish policy and specific guidance for achieving a reasonable level of protection over those items, using telecommunications networks.
- require Executive agencies to submit to OMB new plans for establishing and maintaining a reasonable level of protection over their automated information systems.
- develop procedures for ensuring Executive agencies' implementation of their automated information security program plans.
- fully implement other OMB responsibilities as specified in the Paperwork Reduction Act of 1980.
- to coordinate the policies and guidelines, between OMB and respective Federal agencies, for the protection of

information which should not be made publicly available.

Hernon and McClure (1984)

Title: Impact of Federal Information Policies on Public Access to Government Publications/Information (a chapter in Public Access to Government Information).

Method: Opinion Essay

Audience: Federal Government, Private Sector, and Library Community

Themes:

- the policy directives of the Reagan administration are having a profound impact on agencies and their provision of public information.
- Congress is also concerned about the effectiveness and efficiency of its publishing programs.
- economy is the primary factor governing the Federal government in its role as a producer and disseminator of public information.
- the OMB directives represent a restrictive view of national information policy.

Recommendations:

- a national policy which makes public information available to all (including the information rich and disenfranchised) should be developed. A strong national information policy that balances the various demands placed on access to Federal information is needed.
- documents librarians must work effectively in the political environment to ensure that the public has acceptable access to government information. "Establishment of a national information policy that encourages access to information is not only necessary, it is essential for the continuation of a democratic form of Government" (p. 41).

Hoos (1978)

Title: Paperwork Control

Method: Opinion Essay

Audience: Congress, OMB, other Federal agencies, and the Educational Community.

Themes:

- the article was written with respect to the Educational Amendments of 1978.
- every administration has used paperwork as a political "whipping boy," and a "remedy-by-reorganization" has invariably exacerbated the problem.
- paperwork problems are not simply technical; they are political and social as well. For the advocates of the Amendments, reorganization and centralization are articles of faith.
- information is not value-free; the aggregation, selection, organization, and interpretation of data are all value-laden, and are related to the mission of the agency. It requires sound knowledge and judgments to eliminate "excessive detail and unnecessary and redundant information requests."
- the implication of the Amendments is that the U.S. benefits from greater efficiency in the operation of Government but at the same time the public receives greater Governmental interference in their daily lives.

Recommendations:

- some duplication of information is necessary, because:

> it provides safety factors, permits flexible responses to anomalous situations and provides a creative potential for those who are able to see it. If there is no duplication, if there is no overlap, and if there is no ambiguity, an organization will neither be able to suppress error nor generate alternate routes of action (p. 8).

- It would be far more constructive, even under the conditions of scarcity, to lay aside slogans and turn attention to a principle which lessens risks without foreclosing opportunity.

Kirschten (1983)

Title: In the Budget Trenches, OMB Takes Aim at Government Printing Costs

Method: Report Essay

Audience: Federal Agencies and the General Public

Themes:

- the information which OMB obtained from Federal agencies about excess press capacity and operational costs far exceeded the expenses incurred by the GPO.
- OMB found that (1) in many of possible closing printing sites, commercially available printing services could be obtained at significantly lower costs, (2) the majority of non-GPO agency presses operated at significantly higher costs than the GPO operation, and (3) costs per unit vary widely among agency print shops.
- privatizing Government printing needs is one of the major initiatives of the President's Reform 88.
- the amount OMB actually could save remains undetermined due to uncertainties.

Recommendations: None

Kuziak (1980)

Title: Bothered by Too Much Paperwork? OMB Thinks It Has the Answer

Method: Report Essay

Audience: Fedeal Agencies, Business Community, and the General Public

Themes:

- some segments of the public, particularly business, which bears much of the Federal paperwork burden, reacted favorably to the OMB regulations proposed in January 1980. However, the reactions from Federal agencies have varied significantly.
- the issue to be resolved is which agencies would have to operate under annual paperwork budgets. The rules proposed by OMB would exclude the independent regularoty agencies and the Internal Revenue Service.
- OMB's proposed regulations would establish a Federal information locater system designed to eliminate duplicative information requests by different agencies.
- the basic issue is whether OMB can enforce its paperwork reduction effort effectively and flexibly.

Recommendations: None

Levin (1983)

Title: Access and Dissemination Issues concerning Federal Government Information

Method: Opinion Essay

Audience: Federal Government and Library Community

Themes:

- a national information policy, one which is "unplanned, with little democractic participation, and less unanimity," is emerging. This policy is being developed by the private sector and supported by the Reagan administration.

- new technologies "are making the current patchwork dissemination system obsolete" (p. 128).

- "... Federal policies and initiatives concerning information dissemination and access depicts a scenario rife with special interests and/or executive benign neglect" (p. 135).

- government information is being treated more as an economic than a social good.

Recommendations:

- information professionals must attempt to influence Federal policies and legislation which affect their profession and the social good. The goal is "continued and improved access to the nation's vast Federal information resources" (p. 136).

Office of Management and Budget (1982)

Title: Improving Government Information Resources Management

Method: Evaluative Report

Audience: Congress and Federal Agencies

Themes:

- the report highlights Federal agency efforts to improve Federal information resources management under the Paperwork Reduction Act of 1980.

- information resources management should entail the management of the total information life cycle, from collection to dissemination.

- information is an economic resource and should be managed the same as other economic resources.

- public information resources should be allocated in the most efficient way possible.

- Federal information activities must be managed effectively and economically. The Government should impose minimal reporting requirements on the private sector.

- improved information mangement will result in tangible improvements.

Recommendations:

- monitor the information resources management systems which Federal agencies set up, and take appropriate steps as suggested from reviews of these systems.

- establish an incentive structure based on the application of economic theory to the improved management and allocation of Federal information resources.

- evaluate the effectiveness of agency information resources management.

- encourage public and congressional discussion with agencies on their information management activities.

Rosenau (1982)

Title: OMB War on Unnecessary Government Publications Aims to Increase Efficiency.

Method: Report Essay

Audience: Education Community

Themes:

- the essay considers possible impacts of OMB regulations on the education community.

- throughout Government, there seems to be a push to involve the private sector and professional associations in the publication of titles which they believe will receive wide distribution.

- the move to cut back publishing programs is healthy and will lead to a good overall publication plan.

- titles which Congress believes should be published ought to be exempt from the cutbacks.

Recommendations: None.

Smith (1984)

Title: Information: Public or Private

Method: Opinion Essay

Audience: Federal Government, Private Sector, and Library Community

Themes:

- the controversy between the public and private sectors, in the dissemination of public information, has become "decidedly heated" under the Reagan administration.
- librarians are concerned about the implications of Federal policies which have reduced the number and types of public information available.
- the Reagan administration is redefining the role of the Federal government in information policy matters.
- policies pursued by the Office of Management and Budget are at the center of this redefinition. Circular A-76 encouraged a "competetive enterprise system" and recognizes that the Government will "rely on commercial sources to supply the products and services the Government needs." OMB supports the takeover of Federal information systems, products, and distribution by the private sector.
- "the role of libraries in an information society is becoming less clearly defined" (p. 277).
- OMB directives are changing the information environment and represent "a narrowing of the gap between the outlooks of the Government and the private sector with respect to information availability and access"
- the Government is placing greater emphasis on the monetary value of information than on the social value.

Recommendations:

- publicity, attention, and public policies should be directed to assessing the implications of more government information "crossing the line into the private sector" (p. 280). The Government must recognize its responsibilities and better balance the social with the economic good of public information.

Stokes (1984)

Title: Federal Publications Cutbacks: Implications for Libraries

Method: Opinion Essay

Audience: Federal Government, Private Sector, and Library Community

Themes:

- President Reagan's moratorium on new government pamphlets, periodicals, and audiovisual products has generated considerable controversy in Congress, the media, and the library community.
- a pattern of neglect is apparent in the information collection and dissemination activities of the Federal government.
- the impact of OMB directives on the collection and dissemination of public information is documented.
- cutting data collection activities means a reduction in the number and types of government publications issued. Cutting publishing programs indiscriminately, as OMB has done, means that gaps in knowledge of part of the 1980s is lost and that some decision making will be based on outdated and incomplete information.

Recommendations:

- "given the social, political, and economic priorities of the Reagan administration, no "central directive" is needed in order to reduce the availability of government information. The effects of so-called "isolated events" under the present leadership have significantly restricted the flow. On the contrary, a central directive will be needed if the Federal government is to restore a commitment to an informed citizenry" (Ibid).

Washington Post (1984)

Title: OMB Relaxing Efforts to Contract Out Agency Services

Method: Report Essay

Audience: Readers of the Newspaper

Themes:

- OMB Circular A-76, for contracting out of Government activities or encouraging other agencies to compete for the work, has been very controversial.
- the Reagan administration is now concentrating its efforts of 14 specific areas: automated data processing, data handling, audiovisual services, library services, and so forth. It is also having OMB establish a clearinghouse to assist agencies in sharing information.
- efforts of the Reagan administration to expand the involvement of the private sector in information policies remains controversial.

Recommendations: None

National Technical Information Service (NTIS)

The National Technical Information Service, an agency of the Department of Commerce, serves as a "central permanent source" for scientific and technical information (sponsored research, development and engineering reports, etc.) as well as source material for behavioral and some of the social sciences (e.g., business, sociology, and urban affairs). Selected domestic and foreign reports are collected, placed under bibliographic control, and disseminated to a diverse clientele: individuals, businesses and industries, professional organizations, libraries, etc.

The products and services of NTIS are intended:

> to increase the efficiency and effectiveness of U.S. research and development, to support U.S. foreign policy goals by stimulating the social and economic growth of developing nations, and to increase the availability of foreign technical information in the United States (National Technical Information Service, 1983).

NTIS disseminates its products in paper copy, microforms, and machine-readable form. It also manages the Federal Software Center for intragovernmental distribution. Since Congress has required the agency to be self-supporting (NTIS does receive some subsidy from those Government agencies which pay for the distribution of their publications), the costs of NTIS's services and products are paid from sales income.

In 1982, a furor was created when the Reagan administration, as part of its exploration of ways to transfer Government activities to other organization in the information sector, evaluated the future of NTIS. One option under consideration was the dismantling of the agency while another was to reconsider its place within the Department of Commerce. The literature from that time period reflected arguments about the proper role of the private sector. Concern was raised that the private sector would select the "cream" or titles with the high sales potential and ignore the rest. If this occurred, there would not be an effective mechanism for the distribution of other reports.

Another issue raised was that the public should not have to pay twice for information. In regard to this issue, the private sector maintains that the fees that a commercial distributor would charge would be based on the costs of the distribution of the information and not on the costs of creating the information. Distribution costs would be incurred whether public or private sector means were used, and these costs need to be covered, whether by subsidy or by a charge.

A statement on NTIS's organization can be found in the Federal Register (41-18538) for May 5, 1976. This section of the chapter will focus on the legal mandate of the agency as specified in Title 15, United States Code, Chapter 23 (sections

1151-1157.

Assessment of the Coverage in Title 15

Potential Applications:

- serve as a clearinghouse for the collection and dissemination of selected types of information.
- provide bibliographic control for such information, both foreign and domestic.
- provide information to specific target groups (industry, business, Government, and the general public).
- offer specific services (e.g., abstracts, translations, indexes, and microforms and other reproductions).
- effect the removal of restrictions on the dissemination of scientific and technical information where national security issues are not concerned. The removal of these restrictions is done to benefit business and industry.
- make the services and products "self-sustaining or self-liquidating." Further, "the general public shall not bear the cost of publications and other services which are for the special use and benefit of private groups and individuals" (Section 1153).
- direct all information of military value or significance to the armed services; NTIS shall refer other relevant information to the appropriate Federal agency.
- protect national security.

Limitations:

- the removal of national security restrictions can only be done to benefit business and industry.
- the requirement that NTIS be self-sustaining is an inhibiting factor. It means that the clearinghouse must be careful about which products and services it offers. For example, effective dissemination of numeric data files requires either a subsidy from the producing agency and/or the preparation of codebooks, the special training of service, etc. For reasons such as these, NTIS could not become a central clearinghouses for all kinds of data files.
- by selling sources on a self-sustaining basis, NTIS must price many of its publications higher than perhaps

many individuals and segments of the population are willing to pay.

- NTIS does not exercise quality control over the publications which it collects and disseminates. The publications in its data base vary significantly in their quality.

- by legislative mandate, NTIS is charged to serve primarily business and industry. However, this constituency is broad and contains many segments.

- any expansion of services and products related to machine-readable files must be pursued with caution. The cost of producing codebooks and training staff for sales and service could make the inclusion of some numeric and other data files prohibitive, if subsidies were not forthcoming from other Federal agencies.

- no other major Federal information agency is mandated to be as self-sustaining as NTIS.

Contradictions:

- NTIS is required to protect national security while at the same time it seeks to reduce restrictions on access to classified information for business and industry. It can be questioned if the agency can fulfill both functions effectively.

- the purposes of the GPO and NTIS are contradictory, ambiguous, and at times self-defeating. The legislation for both seems to operate in a vacuum of the other.

Gaps:

- self-sustaining pricing policies inhibit general access to NTIS products and services.

- the central gap relates to the jurisdiction NTIS in comparison to that for the GPO and other clearinghouses. Such a gap affects the extent to which a decentralized information environment can be monitored, coordinated, and strengthened.

- as noted by one of the Government officials interviewed, there is approximately a 30% overlap in the collections of the GPO and NTIS. Each sets its own policies, with minimal coordination with the other.

Ambiguities:

- the Secretary of Commerce is authorized to call upon other departments and agencies of the Government to provide such available services or cooperation as he deems necessary in carrying out the provisions of sections 1151-1157. However, this expectation is vaguely worded and open to interpretation.

- the Secretary can determine the particular method of dissemination which can be used for specific products and services. Still, the sections only specify microfilm, which is but one type of microform. In fact, NTIS has used microfiche as its means of distribution. Now it is a active disseminator of machine-readable data files.
- both the GPO and NTIS share similarities in purpose and functions -- the collection and dissemination of public information, and the provision of bibliographic control over this source material.
- Title 44, United States Code, defines government publication but Title 15, in the sections reviewed, does not define scientific and technical information or reports.

Literature Review

Excluding the writings which highlight a new product or service of NTIS or provide an descriptive synopsis of its history and services, the literature analyzing the agency is exceeding small. The inclusion of another qualifier -- publication since 1978 -- further reduces the pool of relevant writings. Nonetheless, two writings exist and merit discussion.

McClure (1979)

Title:	Where Goest Thou NTIS and GPO?
Method:	Opinion Essay
Audience:	Federal Government, Private Sector, and the Library Community

Themes:

- there is a confusion of the roles and function between the GPO and NTIS. They share a similar mandate. Both collect, organize, and disseminate information produced by the Federal government. NTIS focuses on a more specialized source material and also collects on a worldwide basis.

- NTIS is more aggressive than the GPO in expanding its sphere of influence.

- the legal basis for NTIS consumes less than 3 pages [now it is less than 2 pages] in the United States Code as compared to the extensive legislative basis provided for the GPO.

- "The legal basis for NTIS is totally inadequate for the depth and complexity of the services which it currently provides" (p. 88)

- "While the GPO is neatly constrained within specific definitions and limitations, the NTIS has the legal basis to grow and expand without fear of overstepping its mandate -- which at best is vague and at worst all-encompassing" (p. 88).

Recommendations:

- eliminate the ambiguous wording in Title 15, the United States Code covering NTIS.

- develop coherent and coordinated information policies for NTIS, the GPO, and other clearinghouses.

- examine the duplication of services and products among clearinghouses and eliminate the duplication where necessary.

- ensure that NTIS publications enter the GPO depository library program

- bibliographic control efforts of the GPO and NTIS should be unified.

- consolidate the information dissemination services offered by the Federal government among fewer Government agencies.

- in brief, Federal agencies should "develop a long range plan and timetable for the centralized organization, collection, bibliographic control, publication, and dissemination of Federal information. At a minimum, such a plan should address the following:

  (1) identification of the agencies involved in information publications/dissemination and their specific responsibilities and purposes

  (2) recognition of an agency with the authority to centralize and oversee all government publication/dissemination activity

  (3) coordination of bibliographic control and indexes among the various agencies

(4) development of standardized bibliographic elements for the description and accession of Government material among all agencies

(5) establishment of inter-agency computerized information systems which can be accessed by the general public

(6) better utilization of microform technology in the form of Computer Output Microfilm, etc., to reduce publication costs and increase publication availability

(7) better utilization of the depository library system by non-GPO agencies as a means to disseminate government information

(8) recognition that the Government does not publish/disseminate information as an end unto itself but to inform the citizenry and provide for an informed electorate.

An inter-agency plan that addresses these issues is long overdue. Given the complexity of the issues, the number of agencies involved, and the importance of the problem, now is the time to start work on such a plan" (p. 92).

Purcell (1981)

Title: The NTIS Micropublishing Program

Method: Opinion Essay

Audience: Federal Government and Library Community

Themes:

- the micropublishing program of NTIS was examined in both a historical and current [1981] context.
- key enabling legislation is highlighted.
- the range of current services offered is identifed.
- the impact of the micropublishing program on client groups is identified.
- library collection development for NTIS microfiche is discussed.

Recommendations:

- libraries need to develop sound policies for microform technical report collections.

Title 44, United States Code
Government Printing Office

The current chapters of Title 44 that deal with the production and dissemination of public information are based largely on the 1895 Printing Act. Over the years a variety of amendments and administrative actions have been made to the Title in an effort to update some of the principles and to address advancements in information technology. Despite the good intention of the past legislative and administrative remedies, they have been piecemeal and lacking coordination. The result "has been a mismatched conglomeration of statute and administrative fiat which is often confusing to insiders and which is virtualy incomprehensive to those unfamilier with the process." The problem stems from uncontrolled growth of Federal printing, publication, binding, distribution, storage and disposition of government publications. It is difficult for one general title to encompass all these aspects. (*National Publications Act of 1980*, 1980, p. 18).

On May 23, 1979, an ad hoc advisory committee appointed by then JCP chairman Senator Claiborne Pell contacted Federal agencies, private organizations, and individuals with interest in the provisions of Title 44, and issued a comprehensive report outlining the broad scope and complexity of Title 44 (*Ad Hoc Advisory Committee on Revision of Title 44*, 1979). The issue areas identified by the committee include:

- administration and of Federal information policy

- Federal printing production and procurement systems
- impact of new information technology
- access to and distribution of government information
- depository library program
- pricing of government information.

In early 1979, a bill was drafted in the form of H.R. 4572 (S 1436) reflecting the discussions presented in the report by the advisory committee. Through joint hearings held with the the Senate Rules and Administration Committee in July and September of 1979, H.R. 4572 was incorporated in a clean bill H.R. 5424. (*National Publications Act of 1979*, prepared for the Committee on House Administration, 1979).

The bill encountered extensive opposition (both within and outside the Federal government) and ultimately died in the 96th Congress. According to Morehead,

> wholesale revision of this title of the *United States Code* was the wrong strategy at the wrong time. Piecemeal change must indeed be effected, either by amending specific provisions of Title 44 in Congress, or administratively by revising the JCP's *Government Printing and Binding Regulations*. The pity of the Title 44 revision fiasco is that so many talented librarians spent so much time and effort for naught (1983, p. 43).

The problem with piecemeal revision is the determination of which aspects to address and in what order. A further complication is that interrelationships among aspects may go unrecognized and unaddressed.

Assessment of the Title and Its Proposed Revision:

Potential Applications:

The major topics covered by the H.R. 4572 were:

- modernization of the Government Printing Office and its incorporation into the National Publications Office (NPO).

- creation of a commission consisting of a full-time presidentially appointed chairman and six part-time members, who will act as NPO's board of directors to shape national policy related to the production and dissemination of public information.

- the abolition of the Joint Committee on Printing

- Government-wide coordination is necessary for the effective and efficient provision of public information. The provisions of Title 44 should be related to other laws and regulations, e.g., the Administrative Procedures Act, the Freedom of Information Act, the Federal Privacy Act, and OMB directives and circulars (see Appendix 3-1 for an identification of relevant legislation and regulations.

- development of a centralized indexing system and the incorporation of public information in it.

- promotion of public information disseminated through the depository library program.

- designation of a government publications manager in each Federal agency to coordinate that agency's information product.

- expansion of the role of Executive oversight and control over Federal information policy.

Limitations:

- the provisions of Title 44 have grown over the years without adequate attention given to their interrelationships. As a result, the Title is confusing to those within the Federal government, let alone to those unfamiliar with the provisions.

- the JCP formulates policy; however, the JCP is a congressional oversight committee and does not represent the interests of the Executive Branch.

- definitions of key terms such as "printing" in the Title have not kept pace with new developments in information technology.

- the lack of bibliographic control over the information each Federal agency produces hinders effective coordination among various agencies about the type, format, and medium of information production and dissemination.

- the absence of effective enforcement tools provides agencies with little incentive to comply with the Title.

Contradictions:

- OMB stipulates that "the Federal government shall rely upon the depository library system to provide free citizen access to public information" (Office of Management and Budget, 1980, p. 38462). However, the Federal government does not regard the depository program as a major program for the provision of free public access to government information (Schwarzkopf, 1982).

- reproduction from duplicating and copying devices has not been considered under Title 44, although the Government Printing and Binding Regulations (1977) impose requirements on such activities.

- while Title 44 (section 1902) states that "each component of the Government shall furnish the Superintendent of Documents a list of such publications it issued during the previous month...," many agencies fail to do so. The result is that the majority of Federal agencies know little about what information they create and publish.

- the notion of access to public information is an important consideration throughout Title 44. However, the lack of bibliographic control over the information each Federal agency creates signifies that the public must rely heavily on commercially produced information retrieval services and that a large amount of public information will go unidentified. Further, public information may not be distributed through the depository library program.

- the GPO is self-sustaining at the document level while NTIS is self-sustaining at the program level.

Gaps:

- the GPO and JCP permit waivers to GPO publishing (see sections 501, 502, and 504 of Title 44, United States Code) for:

    - an agency to operate a printing plant

    - procurement of an individual title

    - avoidance of licensing.

  The impact of these waivers is to bypass public dissemination through the GPO sales and depository library programs. For example, bypassing the licensing stipulation places the issue of distribution in the hands of a licensee. The product is no longer that of the Government, and depository distribution is prevented. Agencies are currently turning to contractors for the development and maintenance of electronic data files and non-traditional printing. The Executive Branch is clearly taking advantage of loopholes and inconsistencies in Title 44 which define a government publication and printing.

- the Executive Branch views Title 44 as not covering certain types and formats of public information (e.g., maps and machine-readable data files).

- the provision of bibliographic control over publications is not the same as providing bibliographic control over the information in the publication.

- other information disseminators may engage in independent agreements and bypass the GPO and JCP. The Bureau of the Census, for example, may enter into joint statistical agreements if all parties participate equally.

- because Title 44 responsibility diffuses over various Federal govenment entities, there is no single source which would be accountable for the implementation of the Title's revisions.

- "failure of the 1980 National Publications Act to consider the ramifications of the changes in labor-management relations as provided for by the Act, the lack of strict distribution guidelines, and the inability to put a price tag on the bill." (National Publications Act of 1980, 1980, p. 170).

Ambiguities:

- the definition of government publication currently in Title 44 is general and does not reflect adequately the impact of technology upon Government publishing, the various formats in which public information is produced and the methods that agencies use to distribute their publications. Title 44 revision attempted to clarify the term but used an expansive definition which also is ambiguous:

  > The term Government publication means any publication, document, form, machine-readable data file, microform, audio or visual material, or other similar matter, reproduced by printing or other means for a Government entity and for official use of a Government entity.

  The definition also states that:

  > Any material which is developed, created, or produced either by, or under the direct aegis of the Federal Government, and which is reproduced in multiple copies by the government, shall be a Government publication subjected to the distribution requirements of this title.

As this definition illustrates, it is difficult, if not impossible, to develop a definition which is all inclusive and predict every type of publication. Further, some groups favor a narrow definition, which others prefer an expansive one. This fact illustrates the political nature of attempting to legislate a definition based on consensus.

- Section 1902, Title 44, United States Code, states:

  > government publications except those determined by their issuing components to be required for official use only or for strictly administrative or operational purposes which have no public interest or education value and publications classified for reasons of national security, shall be made available to depository libraries.

  However, this stipulation leaves discretion to the issuing agency and does not define key terms such as "educational value."

- in March 1977, Senator Howard W. Cannon, chairperson of the JCP, wrote a letter to the Public Printer granting authorization for the GPO micropublishing program and for conversion to microfiche. However, the concept of a microform sales program was expressly prohibited. However, microfiche titles appear in the GPO sales program.

- the definition of government publication in 44 USC 1901 is "informational matter ... published as an individual document at Government expense or as required by law." However, what is meant by "an individual document" is open to interpretation. It might be noted that the Health Care Financing Administration has decided that the publication Medicare Participating Physician/Supplies Directory is not a Government funded publication and, therefore, does not meet the Title 44 definition of a government publication. The publication will not be distributed to depository libraries. As is evident, loopholes to the Title 44 definition prevent depository distribution of all "government publications."

- the GPO wants to interpret the present definition of government publication in Title 44 as broadly as possible. On the other hand, the Executive Branch wants to assign a narrow definition to the term and to exploit loopholes and contradictions currently existing in the Title.

- cost factors for pricing of GPO sales publications are ambiguous. The GPO cannot strictly adhere to the stipulation that the price "be based on the cost as determined by the Public Printer plus 50 percent" (44USC

1708). Costs related to warehousing, etc. are difficult to ascertain, and the sales potential of a title cannot be precisely determined.

- "The purpose of the 50 percent factor [in pricing GPO sales publications] was unclear because of the imprecise definition of cost" (General Accounting Office, 1983, p. 31). It is unclear whether the 50 percent factor should be included in the pricing formula.

- cost-recovery pricing needs to take into account the price-elasticity of demand. Until the GPO conducts marketing surveys and incorporates the findings into its pricing policy for sales publications, it cannot determine whether lower prices might generate more sales, while higher prices might depress demand.

- the pricing policy specified in Title 44 comprises "an artificial barrier to Government cost recovery for printed information products." OMB believes that the GPO "has a virtual monopoly on the sales and distribution of government publications." "GPO's status as a monopoly establishes no incentives for it to maximize the efficiency of its operations. This is of concern to Executive Branch agencies who must pay whatever price the GPO chooses to charge" (DeMuth, 1983, p. 3).

- "A catch-22 for Government agencies is their powerlessness over the sales of their own publicaitons. GPO, not the agencies, sets the prices of publications and collects the money for their sale. Agencies see no tangible return for their publications efforts and little incentive to promote sales" (DeMuth, 1983, p. 4).

- GPO sales publications are priced to recover costs but at what cost to the public?

- cost data on which to base the price of GPO sales publications are not fully reliable and do not benefit from marketing studies to determine demand (General Accounting Office, 1983a).

- since OMB does not regard legislative revision of Title 44 as eminent, it believes that it should "develop policy guidance on user fees for information products and services that might not be covered by Title 44 (DeMuth, 1983, p. 4). In particular, OMB has in mind those computer based information resources which are available to the public (Ibid.). Examples of these resources would be: machine-readable data files, software files, data base management systems, and online data bases.

- an important issue is "Whether all public information should be distributed through the depository library program" and "What is the ability of the program to absorb all this information?"

- OMB has stated that "the Federal government shall rely upon the depository library system to provide free citizen access to public information (Office of Management and Budget, 1980, p. 38462). However, many publications do not enter the system and the system receives only selected formats of public information. Further, there is significant variation among Federal agencies concerning their participation in the depository program. For a detailed assessment of the program see Hernon and McClure (1984).

Literature Review

Ad Hoc Advisory Committee on Revision of Title 44 (1979)

Title: Federal Government Printing and Publishing: Policy Issues

Method: Evaluative Report

Audience: Congress, Federal Agencies, GPO, and the Library Community

Themes:

- the problem with Title 44 stems from the uncontrolled growth of its contents; revision of the Title is long overdue.
- the purpose of this advisory committee is to identify the major issues and policy questions involved in revising the Title by soliciting comments from Federal agencies, private industry, trade associations, labor unions, the library community, and other interested groups.
- the six topics analyzed by the committee were:
    - possibility or desirability of centralizing the Federal government's printing and publishing program
    - accessibility of public information, and the roles and relationships between public and private disseminators
    - impacts of new technology on the Government's printing and dissemination systems
    - role of the depository library program in providing public access to public information

- establishment of a single entity in the Federal government that would responsible for implementation and administration of national information policy
- cost of public information and role of the marketplace.

Recommendations:

with regard to the administration of information policy:

- Congress should establish a workable, enforceable information policy that encompasses the entire Government.
- administrative decisions should be "reviewable."
- administrative framework should be flexible in order to accommodate technological, political, or social changes.
- the role of Congress and Executive agencies in formulating and administering information policies should be clarified.
- the role of the private sector in disseminating Government generated information should be made clear.
- the right of the public to have access to public information should be insured.

with regard to the Federal printing production and procurement system:

- the role of the public and private sectors in producing Government printing and the system of producing and procuring Government printing, including the issue of centralized and decentralized control, should be fully considered.

with regard to the impact of new technology:

- the responsibility of Government to plan for the use of technology, including the need for standards and the compatibility of components; the effects of automation on the private and public sectors, including the labor market; the cost of technology; and the effects of technology on traditional definitions, e.g., "duplicating" and "printing" should be identified in the revision of Title 44.

with regard to access to and distribution of government information:

- the role of Govenment in providing access to its information and the specific types of information to be dissemenated; the diversity and operation of the dissemination systems which provide direct and indirect access to government information; the public's right to free access to Government information and the need for protection from Government propaganda; the specific types of bibliographic systems which serve as access tools; the role of the private sector in providing access; the usefulness of the marketplace in determining user needs; and the interrelationship between the public and private sectors, including the responsibilities of Government to the private sector should be addressed.

with regard to the depository library program:

- the role of the depository library program in providing public access to government information; the types of information to be distributed; the administration of the depository library program; Federal fiscal support for the depository library program; and the responsibilities of Federal agencies to participate in the depository library program should be considered.

with regard to the pricing of government information:

- overall role of the Federal government in pricing its information, including pricing alternatives; the role of the private sector in disseminating and marketing government information, including specifically the role of the marketplace; the competing methods and systems of pricing government information inside and outside Government, between different units of the Government, and between the Government and private sector; and the relationship between the public and private sectors in disseminating government information should be considered in any revision of Title 44.

Phillips (1980)

Title: Recodifying Title 44, United States Code: the National Publications Act of 1980

Method: Opinion Essay

Audience: Congress, GPO, and Federal Agencies

Themes:

- protected by vested interests and an entrenched bureaucracy, the GPO, for a number of years, has eluded attempts to install modern management techniques for printing, binding, and distribution of the many thousands of Federal government publications provided annually.

- the chapters of Title 44 governing printing policies are virtualy unchanged from the Printing Act of 1985, and thus have little relevance to the contemporary world of new information technology.
- without specific statutory definitional criteria applicable to modern printing technology or to current governmental structures, the JCP has become an anomalistic relic that has no place in any realistic approach to Governmental printing reform.
- under current provisions of Title 44, there is no administrative appeal from arbitrary or capricious actions by GPO officials, no opportunity to provide comments or propose new regulations, and little chance for concerned citizens to help bring about needed reforms.
- the National Publications Act of 1980 (H.R. 5424) would remedy these situations.

Recommendations:

Any revision to Title 44 should:

- contain workable check-and-balance safeguards and adequate cost-accountability.
- assure vigorous congressional oversight.
- provide for the the maximum opportunity for diverse groups to participate in the decision-making process of the new printing establishment and in open meetings which safeguards against arbitrary actions.
- assure that modern printing management techniques and administrative efficiency are initiated.
- establish accountability controls over information resource management functions of Executive agencies.
- assure the employment of workers displaced by new technology.
- make certain the Federal depository program is adequately maintained to improve public access to government publications.

Richter(1978)

Title: The Review of Title 44, U.S. Code

Method: Opinion Essay

Audience: Library Community

Themes:

- revision of Title 44 is not merely concerned with the quality and extent of current GPO activities; an attempt is being made to delineate the philosophy which is to be the basis for the future information generation and dissemination activities of the Federal government.

- key issues in revision of the Title are:

    - the extent of the Federal government's involvement in the generation and dissemination of public information.

    - the role of the Federal government, and of the GPO in light of the development of activities engaged in by the information industry.

    - the extent of Federal financial support to the depository library program to provide improved access to public information.

Recommendations:

- the creation of a national depository agency to serve as the central coordinating unit for the depository library program.

- the establishment, under that agency, of a national depository library, maintaining a permanent collection of all Government-generated publications and having both reproduction and interlibrary loan capabilities.

- improved bibliographic control over the reports literature and the elimination of multiple bibliographic catalogs.

- the creation of a central sales agency for all government publications.

- strengthening the service capabilities of depository libraries and providing Federal funding for depository activities.

- increased coverage for the GPO's Monthly Catalog.

- continuation and expansion of the GPO micropublishing program.

Schwarzkopf (1982)

Title: Depository Libraries and Public Access

Method: Historical Research and Opinion Essay

Audience: Federal Government and the Library Community

Themes:

- "the depository library program is a library initiated program. Major changes in the program have been initiated by the library community to meet its particular requirements for the benefit of its clientele ..." (p. 37).
- the bills introduced into the 96th Congress (1978) proposed major changes in the depcsitory program (e.g., expanding the formats of materials available on deposit and the definition of government publication).
- the bills went beyond the scope of Title 44 and attempted to formulate an overall Federal information policy.
- the Federal government does not regard the depository program as a major program for the provision of free public access to government information.

Recommendations:

- none offered; however, the article analyzes the legislative intent of key bills and public laws.

Schwarzkopf (1984)

Title: The Proposed National Depository Agency and Transfer of the Public Documents Library to the National Archives

Method: Historical Research and Opinion Essay

Audience: Federal Government and Library Community

Themes:

- the ultimate cause of the failure of H.R. 5424 was the "use of Title 44 as a vehicle for developing a Federal information policy." Information policy is the responsibility of Congressional committess such as the Committee on Government Operations, and "printed publications are just one, although an important facet of overall information policy" (p. 39).

- the Committee on Government Operations has not been adequately involved in the consideration of this bill. The Committee, along with OMB, at that time, were concentrating on passage of the Paperwork Reduction Act (1980).

Recommendations:

- further attempts to revise Title 44 must be based on a realization that information policy "goes beyond printing and impinges on the turf of more powerful Congressional committees, as well as a number of Federal executive agencies" (p. 40). This observation is important because information policy includes more than paper copy and microfiche publications. It tries to address other formats (e.g., machine-readable data files and audio-visual products).

- if depository librarians attempt to revise the Title and include these other formats, they must be aware that the interests of these other Congressional committees will be affected.

- experiences gained from attempting to pass the National Publications Act should provide an invaluable lesson for future attempts to revise Title 44.

Title 44 Revision due for House Review (1980)

Title: Title 44 Revision due for House Review

Method: Report Article

Audience: Library Community

Themes:

- the term "government document" has been changed to "government publication", which includes printed matter, microforms, audio or visual presentations, and machine-readable data files. This definition exempts matter that "is required for internal administration or operational purposes only," and thus, it raises the possibility that administrative publications having potential public interest and made available through the depository program may no longer be distributed.

- the provision that audio or visual materials be made available to depositories only on a loan basis has been amended to provide that long-term loans may be made to libraries that have programs that justfy maintenance of selective collections of audiovisual materials.

- one provision recommended by librarians, which was not

> acted upon, was the suggestion to incorporate a system of regional depositories to provide an intermediate level of service to selective depositories.

Recommendations: None

Other Legislation and Regulations

In a letter dated February 16, 1982, Robert S. Willard of the IIA identified key legislation and court cases to support his conviction that the National Library of Medicine was violating the law in its marketing of information products and services below their real cost. Central to his argument was section 483a, Title 31, United States Code, which states:

> (a)ny work, service, publication, report, document, benefit, privilege, authority, use, franchise, license ... or similar thing of value or utility, performed, furnished, provided, granted, prepared, or issued by any Federal agency ... shall be self-sustaining to the full extent possible, and the head of each Federal agency is authorized by regulation (which, in the case of agencies in the Executive Branch shall be as uniform as practicable and subject to such policies as the President may prescribe) to prescribe therefore such fee, charge, or price ... to be fair and equitable taking into consideration direct and indirect cost to the Government, value to the recipient, public policy or interest served, and other pertinent facts.

Therefore, when the Government confers an economic benefit on a commercial entity, it must recover a fee based on the cost and "value to the recipient" "in order that the activity be self-sustaining to the full extent possible" (Congress, 1982a, pp. 54-55).

Circular A-25, which was issued in 1959, attempts to implement this section of the United States Code. A "reasonable" charge "should be made to each identifiable recipient for a measurable unit or amount of Government service or property from which he derives a special benefit" (Ibid., p. 55).

Section 3107, Title 5 of the United States Code, specifies that "appropriated funds may not be used to pay a publicity expert unless specifically appropriated for that purpose." Those officials in the Executive and Legislative Branches which we intereviewd made frequent reference to this statute and observed that NASA produced a number of publications which "violated" this statute. Since agencies ignore or maneuver around section 3107, this statutue merits review and possibly abandonment or enforcement. The existence of such a statute raises issues such as:

- what specific and implied restraints exist on Federal information policies and practices?
- what are the effects of this statute on agency management, resource allocation, and information operations?
- to what extent do agencies comply with the restraints on their practices?

These questions should be added to a research agenda for Federal information policy.

Sterling and Glakas (1984) have produced a "compendium of policies and regulations," with an accompanying annotated bibliography, related to "Automated Data Processing and Telecommunications in the Federal Government." The list of executive orders, court cases, and statutory and administrative law supplements this chapter and Appendix 3-1. In the area described in the document, the Brooks Act of 1965 is particularly significant. It contains the basic authority relative to the Federal government's data processing resources.

Conclusions

This chapter has provided an analysis of significant Federal legislation and regulations related to the provision of public information. It has shown that Title 44, United States Code, attempts to serve as a foundation for information policy but that it is outdated and in need of revision. However, the Federal strategy for accomplishing this revision is unresolved. Recent experience has underscored the problems in attempting either a complete or piecemeal revision. The Chadha decision and interpretations of the Justice Department have complicated the ability of Congress to mandate policy for another branch of Government.

Figure 3-1 identifies the primary stakeholders in the development of Federal information policy. Although there is a diverse array of stakeholders at this time, three have perhaps the greatest significance. First, the Office of Management and Budget represents the interests of the Office of the President in information resource management and economy in Government. OMB is the key player and appears to have the support of the second stakeholder -- the for-profit information sector. This sector is using 31 United States Code 483a as a foundation from which to emphasize its mandate for taking over Federal ventures which are or have the potential to be self-sustaining. Such a statute signifies that the Executive Branch and the private sector will continue to exploit loopholes and contradictions in Title 44 for their own ends. The Joint Committee on Printing is the third major stakeholder. As this

FIGURE 3-1

EXAMPLES OF PRIMARY STAKEHOLDERS IN THE DEVELOPMENT OF FEDERAL INFORMATION POLICY

Federal			Non-Federal	
Executive Branch	Legislative Branch	Independent Agencies		Professional Associations
Office of Management and Budget	Joint Committee on Printing	Federal Communications Commission	Information Industry Association	-Library and Information Science (American Library Assoc., Special Libraries Assoc., etc.)
	Government Printing Office	Post Office	SPIRIT COALITION	
National Technical Information Service	Committee on Government Operations	etc.	Depository Libraries	
			etc.	
National Commission on Libraries and Information Science	Office of Technology Assessment			-American Society for Information Science
	Library of Congress			-Records Management Association
National Bureau of Standards	etc.			
				etc.
National Library of Medicine				
Department of Agriculture				
Office of Telecommunications				
National Telecommuncations and Information Administration				
etc.				

chapter has emphasized, the JCP is perceived by a number of individuals in both the Executive and Legislative branches as a weak player, one linked to printing policies and practices of the past, rather than information policies for the future.

Both Title 44 and Title 15 illustrate that there is no single corpus of law to coordinate agency activities, eliminate ambiguities in Federal information policies, or clarify the oftentimes confusing and contradictory array of services that agencies provide. The Paperwork Reduction Act, combined with the desire of the Reagan administration and Congress to reduce Federal spending and to take into account the needs and interests of other stakeholders in the information sector to make Government more efficient, have served as the central focus for the development of current information policies.

The Paperwork Reduction Act of 1980 has set the tone for current Federal information policy. The Act focuses on information management and assigns specific responsibilities to OMB. Using this Act and specific directives, OMB has placed economy in Government and the role of the private sector as central issues in Federal information policy (Mason, 1983). Many members of Congress also concerned about economy in Government support greater efforts to reduce Federal spending and the size of publishing programs.

The DeConcini amendment to the Deficit Reduction Act of 1984 authorized OMB to seek further reductions in Federal publishing and other areas. It would seem that concern about the size of the Federal deficit, coupled with the reelection of Ronald Reagan as President, will spark attempts in 1985 to further cut Federal spending. Federal information policy will undoubtedly continue to shaped by information resource management and economy in Government.

Review of the eight laws and regulations analyzed in this chapter indicates some similarities when their gaps, limitations, and contradictions are explored. Clearly, they reflect a need for bibliograhic control over Government publishing and a concern for increased economy in Government. It would seem that economy is stressed over issues such as the social good of public information, in part because costs are easier to identify and address in a budget driven environment.

Issues are raised about limiting the availability of public information and access to this information. As the GPO and the clearinghouses become more selective in the information which they distribute, physical access to public information becomes more complex; those able to invest time and money in obtaining information and those familiar with the structure and functions of each agency can negotiate the information maze more effectively that others.

The Federal government is also placing greater emphasis on the availability of information in formats other than paper. This trend has significant implications for public access and use of public information. Pricing policies of the clearinghouses (including the GPO) and the initiation of, or increase in, user fees affect public access. The message is clear; the Government emphasizes information management and economy in operation of Federal agencies. Nonetheless, the volume of annual publication is still staggering and public access to the wealth of information is inhibited.

Recommendations

From the detailed examination of specific legislation and regulations, five general areas for policy recommendations are suggested: (1) a review of the United States Code, (2) pricing policies, (3) information policies -- their coordinations and intent, (4) information dissemination policies, and (5) economic versus social good. Each of these areas is discussed in more detail in Chapter 4, which identifies and discusses policy issues related to the Government's provision of public information and the role of information technology to enhance public access. The policy recommendations offered here are based on the discussion of contradictions, gaps, and ambiguities in the previously analyzed Federal legislation and regulations. Appendices 4-1 through 4-9 list selected information policy issues associated with the Government's provision of public information and use of information technologies.

United States Code

An examination of the principles guiding the GPO suggests that Title 44 does not adequately reflect the present and future of public information production and dissemination. It is linked to the past, in particular the 1895 Printing Act. The definition of printing, government publication, and the type of public information resources available for depository distribution are limited and outdated. The definition of printing also does not cover copying and duplicating technology.

Studies might be commissioned to probe GPO's legal foundation and that of various clearinghouses. The research could identify options and models, and offer a foundation from which hearings and new legislation could be advanced. One weakness to Title 44 revision was its apparent intent only to provide a general framework, which was subject to change and represented a sharp break with the past; no adequate rationale for the change was advanced. Perhaps the intent was to fill in the gaps through administrative law. At any rate, research and development studies are needed to avoid these pitfalls and to set criteria by which the most viable political, economic, and technological dissemination mechanisms can be implemented.

Pricing

Public information is becoming an expensive resource -- too expensive for meeting information needs of some user segments. It may be counterproductive to enhance bibliographic and physical access to information, when the cost of the information is beyond what the public is willing or able to pay. Pricing policies of Federal agencies and clearinghouses should be reviewed and brought better into line with the role of Government as a communicator to those governed.

Some stakeholders in the information sector such as the IIA and the SPIRIT Coalition suggest that the Government must consider all costs incurred in the development, production, and dissemination of public information. If this, in fact, occured, pricing for public information would drastically change. How information is priced is crucial to its access and availability.

Information Policies--Their Coordination and Intent

Since the Federal government maintains a decentralized information environment, the concept of a national information policy may be simplistic and unrealistic. There are numerous pieces of legislation and regulations related to information policies, as reflected in Appendix 3-1. These policies merit review and coordination, beyond the emphasis placed by the Paperwork Reduction Act and OMB. The information policies of the GPO, NTIS, and other clearinghouses must be reviewed to examine areas of similarity and to bring together the various goals of these clearinghouses. For example, section 501 of Title 44, United States Code, specifies that the GPO will do all printing for the Government, with certain exceptions; the provision is not strictly followed. Gaps and loopholes in the public laws should be assessed and their implications to public access and economy in Government identified. Change would ultimately require extensive negotiation of vested interests and historical tradition.

Dissemination

Dissemination mechanisms for public information are quite diverse. The central issues relate to how much public information is disseminated and the effectiveness and efficiency of the means of dissemination. If fewer titles are entering the sales program of the GPO and if the Government is reviewing dissemination mechanisms to enhance the economy of information flow, the implications for public access must be evaluated.

There is clear need for investigation and legislation which cuts across the dissemination activities of individual agencies in a branch of Government. At the same time, the role of OMB in this process merits review. Information management must balance economy in Government with criteria such as the social good. These criteria must be identified and not subject to a myriad of interpretation. Cost-benefit analysis is complex, but the benefits of information policies, sources, and services must be determined and given proper attention.

Economic versus Social Good

Current information policies and practices will have "long-term effects on how and at what cost the knowledge base of the United States is built" (Schuman, 1984, p. 56). They also affect the types and formats of public information produced and disseminated, public access to information, and the role of the Federal government in information provision. Guiding Federal policy is the expectation that program and service costs be reduced and that other stakeholders participate more fully in information provision and dissemination.

Various stakeholders in the information sector, including the public, have an interest in determining the extent to which "information is a commodity subject to a totally unregulated free market" (Ibid.). Presumably the Government considers the social good in the formulation and administration of information policy. However, the actual determination of what comprises the social good is often a political decision.

The Information Industry Association and the SPIRIT Coalition (Sensible Policy for Information Resources and

Information Technology) comprise a very effective lobby. They maintain that the private sector should distribute public information and that the Government should be the publisher of "last resort." Since the public's interest is not represented by a similar lobbying group, it becomes even more difficult to balance social goals against private interests (Schuman, 1984).

By refuting the belief that information can be treated purely as an economic commodity, Parker (1976), in effect, raises an important question: "What is the cost to society if information is not treated as a national resource for the public good?" Presumably the opportunity for equal access to public information represents a natural extension of democracy. The American public should not let the Government or special interest groups dictate what public information will be released and in what form.

Summary of Significant Policy Issues Addressed in This Chapter

The legislation and regulations examined in this chapter typically emphasize economy in Government over the social good. Coverage of the pricing of public information identified policy issues relating to:

- whether various pricing policies should be consolidated
- whether the 50% add-on component of the GPO pricing formula (section 1708, Title 44) should be revised
- whether the price of a public information source should reflect the full-cost (research, writing, production, distribution, etc.) or partial cost

The issues of economy in Government have afforded OMB an excellent opportunity to move effectively into the formulation and administration of Federal information policy, to challenge policy interpretations which the JCP has rendered, and to characterize the JCP as linked to past printing practices. By underscoring the political aspect of Federal information policy, OMB has dramatically disclosed the current policy vacuum which exists. Apparently OMB is the only Federal agency, at present, able to fill the void.

An extensive list of limitations, contradictions, gaps, and amibiguities for the eight pieces of Federal legislation and regulations was identified. Taken collectively the list virtually encompasses all the principle themes and policy issues identified in Figure 4-1. Only the theme "privacy, security, and copyright of Government provided public information" and its six policy issues were not covered; however, their analysis was beyond the scope of this report.

The section of this chapter entitled "recommendations" identified five general areas for policy recommendations: (1) a review of the United States Code, in particular Title 44, (2) pricing policies, (3) the coordination and intent of information policies, (4) information dissemination policies, and (5) the economic versus social good. Each of these areas requires additional research, investigation, and legislative action. The next chapter will offer specific recommendations for addressing policy issues.

CHAPTER 4

REVIEW, ANALYSIS, AND RECOMMENDATIONS OF POLICY ISSUES

This chapter reviews significant policy issues related to Federal provision of public information and effects of technology on the provision of this information. The first section presents an overview of the literature related to both policy areas and a suggested typology for conceptualizing and addressing the issues which they raise. The second section identifies significant policy issues, provides a brief description of each issue, offers strategy options for resolving that issue, and analyses the implications of the options. The third section examines options presented in the second section, suggests three policy strategies, and analyses those strategies. The concluding section assesses Government provision of public information from the perspective of the user.

Definitions of key terms such as "public information", "Government provision of public information", "public access", "legislation and regulations", "stakeholders in the information sector", and "effects of technology" have been presented in previous chapters. Throughout this report, the term "policy issue" is defined as a topic whose resolution is in dispute among various stakeholders in the information sector. An issue exists because "somewhere there is a threatened shift in the relative distribution of the existing power structure or other potential changes in the present distribution of resources" (House, 1982, p. 162).

In order for resolution of the issue to occur, compromises among the stakeholders' economic, politic, and social philosophies may be necessary. Then, policy, legislation, regulations, or agreed-upon guidelines formalize the compromises as a means to direct future decisions and courses of action.

"Policy" is meant to describe a particular set of views, based on a set of assumptions or values which direct specific types of procedures and activities.

The literature examined for the previous chapters identified various policy issues related to effects of technology on Federal provision of public information. Some of the more useful sources that specifically listed policy issues have been included as Appendices 4-1 through 4-9. These nine appendices list a total of 269 policy issues. Although many of them relate to similiar topics, there are surprisingly few that are direct duplications of each other. Rather, the various policy issues tend to extract or emphasize unique aspects of basic themes.

For example, the policy issues from the National Commission on Libraries and Information Science's National Information Policy (1976) lists 15 broad areas of recommendations (see Appendix 4-1). The Ad Hoc Advisory Committee on Revision of Title 44 (1979) lists over 100 issues related, specifically, to the revision of Title 44 of the U.S. Code (see Appendix 4-2). Many of these serve to detail and specify the broader issues included in Appendix 4-1.

A different vantage point is represented in the policy issues which Lacey listed in Information Science and Technology Act of 1981 (see Appendix 4-3). Although these issues relate to Government provision of public information, they emphasize the concerns of the for-profit information sector for exploiting information technology as a commodity in the marketplace. A similiar emphasis can be found in the issues listed in the report Public Sector/Private Sector Interaction in Providing Information Services (National Commission on Libraries and Information Science, 1982) and included as Appendix 4-4. This report lists seven principles and 27 recommendations, which, if slightly re-worded, can be construed as policy issues.

The issues which Chartrand and Carr identified in Computer Based Information Systems and Services for Rural America (Congress, 1982b) covers both technology and public access (see Appendix 4-5). A similiar perspective is shared in a proposed policy statement from the Office of Management and Budget (1983a) regarding "topics" related to Federal information management (see Appendix 4-9).

Representative Glenn English, Chairperson of the Subcommittee on Government Information, Justice, and Agriculture identified 31 very specific issues related to the establishment of electronic filing systems with special attention given to the Federal contracting of the design and implementation of such systems by private contractors (see Appendix 4-6). These 31 issues offer an excellent perspective on policy issues related to Federal information systems and public access, responsibilities of the Federal government versus contractors, monopoly of Federal information, and other concerns.

The Ad Hoc Committee on Depository Library Access to Federal Automated Data Bases (Congress, 1984) identified ten issues related to the transfer of electronic data to depository libraries (see Appendix 4-7). Finally, the authors of this report, as part of their "Detailed Outline" identified 16 broad areas of policy issues for the Office of Technology Assessment (see Appendix 4-8).

An item-by-item analysis of the 269 policy issues listed in Appendices 4-1 through 4-9 was done to assess the scope, topics, and duplication among these various policy issues. Figure 4-1, which offers an overview of these issues, suggests nine principal themes identified throughout the sources reviewed. The figure lists representative (not comprehensive) and significant sub-topics for each of the nine.

An analysis of the issues included in Appendices 4-1 through 4-9 as well as additional sources reviewed for this report, suggests the following:

FIGURE 4-1

OVERVIEW OF NATIONAL INFORMATION POLICY ISSUES RELATED TO THE GOVERNMENT PROVISION OF PUBLIC INFORMATION AS IDENTIFIED IN RECENT STUDIES (SEE APPENDICES 4-1 THROUGH 4-9)*

NATIONAL INFORMATION POLICY

INTERACTION BETWEEN GOVERNMENT AND TECHNOLOGY

- promotion of research related to information technologies
- ownership of new advancements in inf. technology if funded by the Government
- selection of inf. technologies to be used by the Govmt.

INTERACTION BETWEEN GOVERNMENT AND OTHER STAKEHOLDERS IN THE INFORMATION SECTOR

- competition between government and other stakeholders
- responsibility for providing value added enhancements
- responsibility for collecting, organizing, disseminating what types of public inf. to which user segments

GOVERNMENT COLLECTION, TRANSFER, AND DISSEMINATION OF PUBLIC INFORMATION

- intra-governmental transfer of public information
- types of inf. to be collected, organized and disseminated
- contractor/submitor responsibilities electronic data files

STRUCTURE AND ORGANIZATION OF THE GOVERNMENT

- locus of authority for coordinating/ regulating inf. policies
- coordination with state and local governments
- centralized versus decentrlaized inf. policy development
- Executive versus Legislative controls

PRICING OF GOV. PROVIDED PUBLIC INFORMATION

- value of inf. as a commodity
- definitions of "cost recovery"
- use of Govmt. subsidies and incentives
- impact of fees on access

STANDARDS AND COMPATABILITY OF GOVERNMENT INFORMATION SERVICES AND PRODUCTS

- what specific areas are to be included for standards
- responsibility for standards development
- bibliographic control issues

ROLE OF THE GPO AND THE DEPOSITORY LIBRARY PROGRAM

- revision of Title 44, USC
- role of GPO as printer or publisher
- enforcement responsibilities
- relationships with other Govmt. depository programs
- types of information and formats to be included

PUBLIC INFORMATION NEEDS AND INFORMATION GATHERING BEHAVIORS

- value of information as a "social good"
- Govmt. responsibility to increase awareness and do marketing
- availabilty versus access
- role of libraries
- determining specific user segment inf. needs for specific types of public information
- responsibility for public information provision to user segments that are "disenfranchized"

PRIVACY, SECURITY, AND COPYRIGHT OF GOVERNMENT PROVIDED PUBLIC INFORMATION

- responsibility for disclosure systems
- criteria for anonyminity of data and users
- ownership of types of public information at various stages of service or product enhancement
- proceduralizing First Amendment protection
- maintenance of accurate and reliable data
- control of who gets access to what types of public information under what situations

*International issues are not included.

- the sources identify similiar broad themes of policy issues (see Figure 4-1)
- surprisingly little duplication exists among specific policy issues; each issue tends to emphasize detailed, unique aspects of the broader themes
- the sources give relatively little attention to issues related to:
    a. the role of the nation's libraries in the Government's provision of public information
    b. user segment information needs and gathering behaviors for public information
- the issues tend to become more "technologically" driven as opposed to "user" or "humanistic" driven with the passing of time
- the degree to which one policy issue can be isolated in terms of its impact on other policy issues is minimal

In general, there has been little progress since the study by Porat (1977, vol. 1, pp. 214-239) in developing detailed typologies of the issues, using sophisticated methods to organize and relate policy issues, or producing better methods of clarifying the issues. One is left with the sense that every policy issue is (1) part of both a larger and smaller issue, and (2) before resolution of any one policy issue can be accomplished, resolution of another is necessary.

In short, there is no lack of sources and publications that list specific issues related to Government provision of public information. Indeed, the 269 issues listed in the appendices of this chapter provide an excellent overview of the nature, complexity, and relatedness of these issues. Further, the publications from which these issues were culled have spent literally hundreds of pages attempting to describe them, and in most cases, urge the

Congress to take action for their resolution.

In a summary chapter such as this, no attempt can be made to review and offer options for all the issues that have appeared in the literature. However, based on the review of the sources used in previous chapters, a selection of the most significant issues can be presented. The authors used the following criteria to assess which of the initial 269 issues (excluding those related to privacy and civil liberties) were most "significant:"

- frequency with which the issue has been raised in the various sources examined
- breadth of time over which the issue has retained attention
- potential for producing significant changes among existing responsibilities of Federal agencies for the collection, organization, storage, retrieval, and dissemination of public information

The authors reviewed this initial list of significant issues and added to it significant issues identified in Chapters 1-3 of this report. The resulting pool of issues were then assessed in terms of the following criteria:

- potential for producing significant changes in Federal power relationships
- potential for producing significant changes in power relationships among non-Federal stakeholders in the information sector
- potential for increasing access to public information
- potential for exploiting information technologies
- potential impact on existing legislation and regulations

This assessment identified fourteen significant issues which are summarized in Figure 4-2.

These criteria have been developed by the authors as a means of assessing impacts from the policies and have been adapted from a discussion by House (1982, pp. 230-231). Further, the criteria are intended to emphasize (1) the

FIGURE 4-2

SUMMARY OF SIGNIFICANT ISSUES DISCUSSED

Federal Organization for Information Policies

1. Should the Federal Government have centralized or decentralized development of information policies?

2. Should formal mechanisms be established that encourage continuing dialogue about Federal information policy among the various stakeholders in the information sector?

3. What is the role of the Office of Management and Budget in the development and management of information policies?

Relationship between the Federal Government and other Stakeholders in the Information Sector

4. What responsibilities does the Federal government have for legislating and regulating access to public information?

5. How can adequate bibliographic control be maintained over government provided public information?

6. Should Federal information activities be administered as a "business" or as a public service?

Information Technology

7. Should the Federal government emphasize the use of various information technologies as a means of collecting, organizing, and disseminating public information?

8. What criteria should be followed by the Government when selecting information technologies for use in the provision of public information?

9. To what degree is the Federal government responsible for providing training or increasing the competency of user segments and public information intermediaries (such as information brokers and libraries) to access adequately public information available through various information technologies?

The Economics of Public Information

10. To what extent should Federally provided public information be considered as a commodity or as a societal good?

11. How should the Federal government price public information?

Public Access and Availability to Public Information

12. What Federal information does the Government have a responsibility to make accessible and available to the public?

13. Should Congress reconsider a revision of Title 44, USC, or proceed on a "piecemeal" basis with the development of Federal policy governing publication and dissemination of public information?

14. What is the role of the various depository library programs in the Government provision of public information?

possible relationship between the issue and various power structures, and (2) the three themes of this report, i.e., public access, information technology, and laws/regulations. The fourteen issues listed in Figure 4-2 represent the authors' assessment of those which are most significant and are likely to have the greatest impact on the effectiveness with which the Government provides public information.

Significant Issues

The literature was reviewed to identify typologies that might be used to organize the issues into some form of a structure. Based on this review the following categories have been identified:

- Federal Organization for Information Policies: the structure of the Federal government regarding provision of public information
- Relationship between the Federal Government and Other Stakeholders in the Information Sector: responsibilities and roles of agencies and organizations engaged in the production, distribution, and dissemination of public information
- Information Technology: applications of information technology and their effect on Government provision of public information
- The Economics of Public Information: costs and benefits of Government provision of public information
- Public Access and Availability to Public Information: the rights of the public and the responsibilities of the Federal government to make public information accessible and available

Clearly, these categories are not mutually exclusive, but they are suggested as a vehicle for organizing the various policy issues and considering options for their possible resolution.

Within each of these categories, significant policy issues are identified and briefly described. Options are offered for the possible resolution of the issue, and implications of the issue and the options are presented in terms of the five criteria presented in the preceding section.

Although all of the issues have been assessed as "significant" by the authors, it is clear that some have greater impact than others, options for resolving one issue may not be feasible unless other issues have been resolved first, and some issues affect the possible resolution of other issues. Additional discussion of the relative significance of the various issues and comparisons of the relationships among options are presented in succeding sections of this chapter.

Federal Organization for Information Policies

NAME OF ISSUE: Should the Federal government have centralized or decentralized development of information policies?

BRIEF DESCRIPTION:

With centralized development of information policy, one agency has primary responsibility for the design, implementation, and enforcement of Federal information policy. Information policy development has been scattered throughout various agencies in the Executive and Legislative branch of Government, and little enforcement of the policies that have been developed has occurred.

A decision to centralize Federal information policy development would call for a clear understanding of the philosophy of the Federal government regarding the creation, organization, dissemination, and access to Government information. "Vertically oriented agencies by definition cannot take broad horizontal views" of the effects of information technology on national information policies (Porat, 1977, Vol. 1, p. 241). Because of the lack of such horizontal integration each agency has established "fiefdoms" of information policies which are often times disjointed and contradictory.

Overlapping centralization or decentralization concerns raises the issue of whether the Executive or Legislative Branch is to dominant the development of information policies. Figure 4-3 suggests that between the two branches, three structural arrangements are possible: Executive dominant, coordinated Executive and Legislative, and Legislative dominant. In each of these arrangements, policy development can be centralized or decentralized. Thus, there could be six possible administrative frameworks by which information policy development could be organized.

Re-organization of Government structure for better information policy design and development (regardless of it being centralized or decentralized) calls for better coordination between the Legislative and Executive branches of Government. The current situation whereby Congress has oversight for the Government Printing Office exemplifies the limited power of this Congressional agency to enforce or execute printing regulations that affect independent regulatory agencies and Executive offices that are not clearly identified in Title 44, USC.

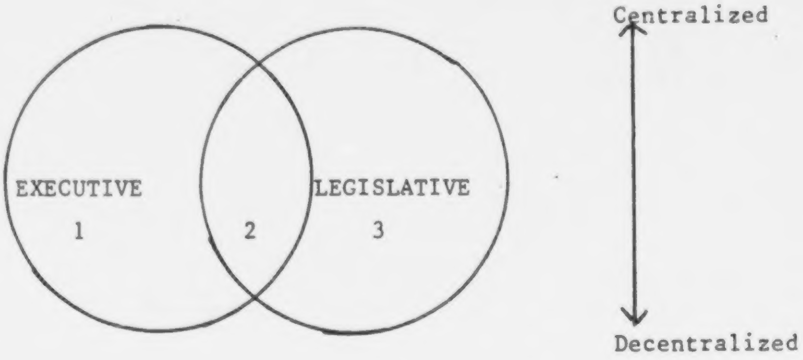
OPTIONS:

- Formalize authority for Federal information policy design, implementation, and enforcement in an existing agency. Candidate locations include: Office of Information and Regulatory Affairs in the Office of Management and Budget, National Telecommunications and Information Administration, National Commission on Libraries and Information Science, or others [centralized option in Executive Branch].

FIGURE 4-3

FEDERAL ORGANIZATION FOR INFORMATION POLICIES*

A. Degree of Coordination Between Executive and Legislative Branches



B. Options for Federal Organization of Information Policies**

Option	Name	Centralized	Decentralized
1	Executive Dominant	A	B
2	Coordinated/Combined Executive and Legislative	C	D
3	Legislative Dominant	E	F

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*The Judicial is not considered in this model as a principal player in the development of information policies; however, such could easily be done. The result would then be seven options which could be considered in terms of centralized or decentralized administrative structures.

**Cells A-F suggest six possible frameworks by which information policy development could be administratively organized.

- Establish an "independent regulatory agency" charged with the responsibility for the design, implementation, and enforcement of Federal information policy [centralized option].
- Expand upon the Paperwork Reduction Act of 1980 to better coordinate information resources management within each of the various agencies by detailing responsibilities for information policy development [decentralized option].
- Establish an agency or redefine the responsibilities of an existing agency to codify and enforce existing laws and regulations related to information policy. The establishment of such an agency either necessitates a combined governance structure from the Executive and Legislative branches or formalizes a governance structure that embodies traditional "checks and balances" between the two branches [combination centralized and decentralized option].

IMPLICATIONS:

This policy issue has been debated for years. However, both the Joint Committee on Printing and the Office of Management and Budget represent two examples of advocates for some degree of centralization. A basis for some degree of Federal coordination within a branch of Government is given in Title 44, USC, the Paperwork Reduction Act of 1980, and those OMB directives discussed in Chapter 3. Title 44, USC, is the only example which transcends one Branch and is technically binding on others. A difficulty with inter-Branch coordination is that the JCP is perceived as incapable of managing the provision of public information and as having exceeded its statutory basis.

The issue may be less the degree of centralization and more the competitive roles of different stakeholders in the information sector as new information technologies are developed and improve the collection, organization, and dissemination of public information. But the degree to which the traditional printing activities, identified with the JCP and the GPO, can be applied to new information technology and resolving competing demands in the information sector remains to be seen. With the invalidation of the legislative veto (INS vs. Chadha, 1983) and the linkage of the JCP and GPO with traditional or past printing practices, the balance of players in information policy is upset. Further, Title 44, USC, is inadequate to the task of managing public information dissemination.

Thus, a key issue is whether the primary role of the JCP should/can be restored or if any other Federal agency should fill the existing power vacuum. Restoration of the JCP as the primary player would require revision of Title 44, USC and a number of officials interviewed for this report had little confidence in the ability of the JCP to "modernize" itself and adapt to new information handling technologies as a means to improve the provision of public information.

The weakening of the JCP complicates access to public information since it and the GPO have been (1) opponents to the privatization of public information, (2) supporters for increased placement of public information into the GPO depository library program, and (3) overseeing the interests of the public regarding access to Federal information. Without a strong JCP or GPO (or similiar agency) it is likely that additional Federal information will escape bibliographic control and methods for public dissemination.

NAME OF ISSUE: Should formal mechanisms be established that encourage continuing dialogue about Federal information policy among the various stakeholders in the information sector?

BRIEF DESCRIPTION:

A concern raised by a number of studies (e.g., Levitan, 1981) is the lack of formal methods by which the various stakeholders in the information sector can maintain an ongoing dialogue about policy issues and procedures related to Government provision of public information and the effects of technology on such provision. Currently, such communication is scattered and uncoordinated and open discussion of these issues takes place primarily with middle or lower administrative levels of the Federal government.

Information policy development has evolved as primary concerns for the Executive and Legislative branches while the role of the Judicial branch in information policy development has been minimal. Clearly, there is Judicial information that should be considered as public information, and mechanisms are necessary to include the Judicial branch in such policy development.

Because Federal information policies are decentralized throughout Government, numerous agencies may have to address the same or similiar issues, concerns, and problems relating to the production and dissemination of public information many times. Such a situation encourages a sense of despondency on the part of stakeholders in the information sector and does not encourage confrontation, discussion, and sppedy resolution of information policy issues.

OPTIONS:

- Establish a Federal ombudsman agency which can represent all three branches of Government, or as a source to clarify procedures related to Federal provision of public information.
- Expand the role of the information resources managers (as established in the Paperwork Reduction Act of 1980) to include liaison activities with other individuals and organizations in the information sector (Office of Management and Budget, 1982a, pp. IV-1 through IV-4).

- Establish coordinating structures among Federal agencies whose mission includes the collection, organization, and dissemination of public information

IMPLICATIONS:

Ideally, it can be argued that various stakeholders within and outside the Government should participate in an active dialogue. The GPO, Bureau of the Census, National Library of Medicine, and other Federal agencies have established advisory committees to solicit input. However, the suggestions are not binding and are effective only to the extent to which individual agencies make meaningful attempts to respond to them.

Existing methods for establishing ongoing dialogue tend to exclude for-profit stakeholders in the information sector. For instance, the GPO Depository Council is composed primarily of librarians and for-profit stakeholders rarely participate in Council discussions and recommendations. Yet, in the area of developing information technologies, dissemination of electronic files to depository libraries, etc., such involvement from for-profit stakeholders might be useful.

Examples of the JCP attempting to revise the 1977 Printing and Binding Regulations and OMB to develop revised regulations for information resources management by soliciting public review and opinion demonstrate the importance of an open review process. Such techniques occur by agency choice but they are an excellent means to allow public scrutiny of developing information policies.

Lastly, the issue of encouraging dialogue among the various Federal stakeholders in the information sector should be examined. As noted throughout this report, little attempt has been made to encourage horizontal coordination and integration among Federal agencies regarding information policy development. Formalized advisory councils, which include users, or other strategies should be considered to insure greater coordination related to the use of information technologies and provision of public information among the Federal agencies.

NAME OF ISSUE: What is the role of the Office of Management and Budget in the development and management of information policies?

BRIEF DESCRIPTION:

This issue is part of the larger issue related to the decentralization and centralization of Federal information policy development and enforcement. However, as shown in Chapters 2 and 3, the role of OMB has substantially increased in recent years. Some analysts perceive the agency as removed from direct interaction with the public and as dominated by matters of economy in Government and the political concerns of the Office of the President.

This perspective provides philosophical commonalities with some for-profit organizations in the information sector. But based primarily on the passage of the Paperwork Reduction Act of 1980, OMB is moving toward centralization of information policy within the Executive branch and broadening its authority outside that branch (Sprehe, 1984). However, it has no constitutional authority for the design and development of information policy related to the Congress or the Judicial branches of Government.

OPTIONS:

- Continue the development of OMB as the central player in the design and enforcement of information policy and increase its legislative basis for responsibility of information policy.
- Divest OMB responsibilities for information management and policy development.

- Coordinate information management and policy development among a selected number of agencies.

IMPLICATIONS:

Spokespersons for OMB believe that the Paperwork Reduction Act of 1980 is "a remarkable tool for the development of a consistent Federal policy on information because it combines in one place, namely, the Office of Management and Budget, the functions of input of information to the Government, processing of the information within the Government, and disclosure of the information by the Government" (Sprehe, 1984, p. 355). Guiding the agency is the belief that "information is not a free good but rather a resource of substantial economic value and should be treated as such" (Ibid., p. 354).

Circular A-76, which is another cornerstone of OMB's information policy, guards against the Government competing unfairly with the private sector for goods and services which the Government procures for its own use.

> However, there is no enunicated policy that governs the Government's conduct when the Government provides goods and services for the public's use. That is, A-76 pertains only to getting things for the Government's use. But what if the Government provides it for the public's use? If a Federal agency chooses to provide an information service that competes unfairly with existing services in the private sector, there is no Government policy to say: "Thou shalt not do that." It may seem obvious that there ought to be an extension of A-76 into the situation in which the Government is providing the services to the public but at present we do not have such a policy (Ibid., p. 357).

Such positions raise legitimate questions about whether OMB is trying to restrict the free flow of public information, whether public information is a "natural resource" essential for the well-being of a democracy which leads to a better quality of life, and whether public information is becoming a commodity for the information rich and technologically literate.

Although OMB is perhaps, at this time, the major force in the creation and implementation of Federal information policy, it faces two major limitations:

- it can only set policy for the Executive branch of Government
- it must conform to (or attempt to circumvent) the provisions of Title 44, USC and other existing laws and regulations (as discussed in Chapter 3)

An issue becomes the extent to which OMB supports Title 44, USC, and the extent to which it attempts to undermine Federal statutes related to information policies. Although the JCP may have a broader perspective on the relationship between Federal information policy and the value of public information as a social good, new legislation would be required to either change the developing role of OMB or to increase the authority of the JCP.

Thus, one is left with the sense that the role and authority of OMB can be whatever it wants unless Congress is willing to define, modify, or otherwise alter that role. Clearly, the Paperwork Reduction Act of 1980 has given OMB a powerful base from which it can expand its sphere of influence within the Executive branch.

Relationship between the Federal Government and other Stakeholders in the Information Sector

NAME OF ISSUE: What responsibilities does the Federal government have for legislating and regulating access to public information?

BRIEF DESCRIPTION:

Responsibilities of the Federal government for legislating and regulating public information depend, in part, on the view one holds regarding ownership of public information. At one end of a continuum, it can be argued that information collected, created, and/or organized by the Federal government is owned by the public *at large* and that the Federal government has responsibilities to the public to insure its access. On the other end, the argument can be made that the "marketplace," when allowed to operate, would provide adequate regulation over the collection, creation, and organization of public information.

Little evidence exists to support either of these two arguments to the exclusion of the other. First, Federal legislation and regulation, in some instances, have been shown to stifle creativity and innovation systematically, establish artificial pricing of services/products, and provide complicated and, at times, contradictory regulations. However, "marketplace" solutions ignore access to services and products by those who are disenfranchized, limit the production of services and products to those which are perceived as "profitable," and may result in disruptions of services due to delivery or production problems.

OPTIONS:

- Identify specific value added services and products for Federally collected or created information and determine the _level_ of Federal responsibility for each value added process.
- Establish a "public utility model" for the regulation of public information as discussed in Salvaggio (1983) (see Figure 2-3).
- When public information collection or creation services are established, clarify the degree to which they are to be made available for public dissemination.
- Establish _quid pro quo_ regulations with value added processors of public information in the information sector. For instance, if for-profit organizations contract for the operation and provision of value added enhancements to the information, they still must provide some _minimal_ access to the basic system as developed by the Federal government at an affordable cost to the user.

IMPLICATIONS:

Federal information practices, services, and products related to public information must conform to enacted statutory and administrative law. The Government should ensure that the provisions of Title 44, USC, and other laws are strictly enforced and that loopholes in legislation are identified and resolved in the best interests of the public. For example, the waiver provisions of Title 44, USC (sections 501 and 504), should not serve as a basis from which agencies circumvent the scrutiny of the JCP and seek to increase the amount of public information which is privatized.

Agencies with missions requiring the dissemination of public information should not have their budgets slashed so that they cannot accomplish their stated information dissemination-related missions. There is a need to differentiate between those agencies which disseminate information as a means to a larger end (access to public information) as opposed to those that disseminate information as a end unto itself (promotion of the agency). Congress can rely upon oversight responsibilities to determine the degree to which individual agencies are, in fact, meeting their stated missions related to public information provision.

Guidelines for contracting information systems to non-Federal vendors are not well-stated and allow for numerous problems to occur, virtually all of which injure the degree to which the user can effectively access public information from those contractors (English, 1984). Clearly, the Government has not meet its responsibilities for legislating and regulating access to public information in this area.

In this present political climate, the Government is trying to reduce its responsibilities for legislating and regulating access to public information and increase regulations related to internal information management. Figure 4-4, which depicts the concept of a safety net for accessing public information, dramatically illustrates this point. The assumption is that whatever is done, the public is protected; mechanisms exist whereby the public has an equal opportunity to gain access to public information. Such is not the case; the existing "safety net" is narrowly conceived.

ISSUE NAME: How can adequate bibliographic control be maintained over Government provided public information?

BRIEF DESCRIPTION:

The degree of bibliographic control over Government provided public information, for all formats, is problematical. Since there is little agreement about what specific types of information constitute "public information," an assessment of the degree to which there is bibliographic control over that information is also likely to produce little agreement. Yet, a basic assumption underlying any discussion of Government provision of public information must address issues related to the bibliographic control of that information.

Recently, for example, the General Accounting Office found that "28 of the 36 R&D funding agencies, do not report [their research] to FEDRIP [Federal Research In Progress System]" ("Outlook for Expanding the Federal Research in Progress System," 1984). In addition, two major R&D agencies which spend about 68 percent of the Federal R&D budget, the National Science Foundation and the Department of Defense, are included in the 28 agencies which do not report.

As it has evolved, bibliographic control of public information has been a shared responsibility between a number of stakeholders in the information sector. The Government may provide certain tools, e.g., the Monthly Catalog and Government Reports Announcement Index, but numerous other tools are provided by for-profit organizations such as the Congressional Information Service.

In many instances, bibliographic control devices were developed only after an initial capital investment by the Government. However, for-profit organizations in the information sector have provided some value added enhancements that improves bibliographic control over public information. Nonetheless, there are numerous bibliographic "gaps" over public information e.g., agency reports, research studies, and machine-readable data files.

OPTIONS:

- Identify "levels" of acceptable bibliographic control for specific types of public information rather than attempting "complete" control over all types of public information.
- Encourage non-Federal government stakeholders in the information sector to establish bibliographic control and other types of finding tools over specific types of public information (including those in an electronic format) through the use of subsidies and "start-up" capitalization.
- Enforce existing regulations that require Federal agencies to maintain a list of information sources (with appropriate bibliographic information) which are identified as containing "public information."
- Better coordinate the activities of the primary Federal agencies regarding the establishment and maintenance of bibliographic control over Government information (e.g., the GPO, NTIS, Library of Congress, National Library of Medicine, and the Department of Energy).

IMPLICATIONS:

The problems which the GPO has experienced in attempting to maintain bibliographic control over paper copy and microfiche public information underscores the difficulty in creating widely accepted bibliographic control standards and in generating compliance with these standards. Further, this issue and its options assume that (1) the various stakeholders in the information sector can reach agreement about what constitutes "adequate bibliographic control," and (2) stakeholders engage in a regular and active dialogue on Federal information policies and practices.

There is a discrepancy between the use of technology for establishing improved bibliographic control over public information versus use of technology to create more Federal information systems. Designers of Federal information systems have not attempted to provide adequate bibliographic control because (1) existing laws and regulations, such as Title 44, USC, are not enforced, (2) inadequate competencies related to providing such bibliographic control techniques may exist, and (3) bibliographic control over electronically formatted information is more difficult than over printed copy formats.

An important implication from increased reliance on technologically-based information systems for Government provision of public information is the creation of "disembodied" parts of public information. Machine-readable data files can be partitioned and up-loaded/down-loaded easily, creating new "units" of information. Establishing bibliographic control over these units will require careful planning, extra funding, and sophisticated bibliographic control techniques in the actual information system.

The issues surrounding bibliographic control cannot be resolved by legislation/regulation alone, since, already, there are numerous existing laws establishing procedures to "insure" bibliographic control over public information. The user community must persuasively argue that (1) enhanced bibliographic control is necessary and that there is a demand (and potential profits) for such services, (2) mechanisms for enhanced bibliographic control should be established at the time of the design of the information system and (3) although the Federal government has responsibility to make certain that adequate bibliographic control exists over public information it may not have the responsibility to provide such control itself.

NAME OF ISSUE: Should Federal information activities be administered as a "business" or as a public service?

BRIEF DESCRIPTION:

Currently, there are two opposing views about how Federal information activities should be organized. One view holds that Federal information activities should be organized as a business, i.e., should seek at a minimum to recover costs associated with providing the information service or product (as in the case of NTIS), provide user training (as in the case of the Bureau of the Census), and develop aggressive marketing strategies (as the GPO did when it established a major marketing effort in 1982). The second view holds that Federal information activities intended for the public good do not have to meet criteria such as being self-sufficient. Their primary responsibility lies, first and foremost, in insuring that all user segments of the public have equal opportunity to gain access to public information.

The term "business-like" can be used to suggest simply the efficient use of resources or the economic administration of those resources; thus, one is business-like if one is efficient. Another view is that "business-like" implies administering organizations as though they were in the world of commerce, i.e., market-oriented and profit-oriented. Spokespersons for OMB have written that Federal agencies ought not only to disseminate information at no cost to the government, "but that they ought also, if possible, to recover some of the costs..., and if possible, make a profit on it" (Sprehe, 1984, p. 359). Others would contend that while administering activities efficiently, is, in fact, a primary and appropriate role for the Government, making a profit on information dissemination is not.

OPTIONS:

- Encourage Government information activities to be administered in a business-like fashion, i.e., for-profit. If they can, in fact, be administered in such a manner, then turn them over to interested stakeholders in the information sector with the proviso that they have certain responsibilities to insure a minimum level of access to that information for the public.
- Accept the philosophy that Government is _not_ a business, that it has certain responsibilities that do not fit the business mode of operation, and proceed on a "public service" (subsidized) basis regarding information products and services intended for the public.
- Develop cooperative arrangements between the Government and other stakeholders in the information sector whereby information services are contracted outside the Government and then "sold" back on a "no-cost" clause. The services are provided to other information stakeholders and the public on an "anti-competition" and "non-monopoly" clause (e.g. Department of Agriculture's 1984 negotiations with private contractors).

IMPLICATIONS:

The reports of the Grace Commission argue for improved business practices in Government. Further, the Paperwork Reduction Act of 1980 and the concept of information resources management also support issues of efficiency in Government. However, attention has not be focused on criteria of _effectiveness_ and _utility_ of Federal information services and products, i.e., the degree to which information services meet stated objectives and the degree to which they resolve the information needs of specific user segments.

The position that the Government should administer its information activities in more of a "business-like fashion" results in a dilemma because:

- the Government information activity then has increased the likelihood of competing directly with other stakeholders in the information sector
- if the activity can, in fact, be run successfully within the Government, in a "business-like fashion," i.e., make a profit, then, other stakeholders in the information sector will demand that the activity be removed from the Government and be provided by non-Federal stakeholders

In short, the Government may be placing itself in a "no win" situation by encouraging the development of information activities that are to be administered in a "business-like fashion."

Public access is not well-served by a failure to consider these other factors. Simply improving efficiency without considering effectiveness and utility is naive and simplistic, and ignores the well-known trade-off relationships between efficiency and effectiveness. Further, the Federal government was not established by the Founding Fathers to make a profit despite the wishes of some special interest groups today.

The development of sophisticated technologically-based information systems that collect, organize, and disseminate public information call for large capital investments. Such investments are made by the public at large and not for the benefit for a specific user segment or stakeholder in the information sector. OMB's position that information services should be profit-generating, if possible, forces such services to (1) be in conflict with provisions of A-76, (2) compete directly with for-profit stakeholders in the information sector, (3) be contracted or given to other stakeholders in the information sector that may or may not have to pay the original capital investment in the system, and/or (4) be paid for twice by users.

Information Technology

NAME OF ISSUE: Should the Federal government emphasize the use of various information technologies as a means of collecting, organizing, and disseminating public information?

BRIEF DESCRIPTION:

The position of the Federal government has been, by default, to answer this question in the affirmative. However, there has been little formal attempt to assess the specific impacts of increased Federal dependence on information technologies for the provision of public information on specific markets. The assumption that information in electronic format automatically provides improve access must be re-considered in terms of specific user segments of the public.

Evidence suggests that applications of information technology for the provision of public information effect different segments of the public differently (see Chapter 2). Although the Federal government can better collect, organize, and process public information through the use of various information technologies such as machine-readable data files, this does not, automatically, insure access to that public information. The current cost-driven basis for emphasizing Government use of information technology (see Chapters 1 and 2) must be considered in terms of trade-off relationships with public access.

OPTIONS:

- Make public information accessible and available in traditional paper copy as well as through technological formats such as machine-readable data files.
- Provide the resources necessary for the purchase of technological support equipment, e.g., telecommunications, central processors, personal computers, and microfiche reader-printers to a network of public information disseminator agencies such as the GPO depository libraries.
- Establish standards for the use of information handling technologies related to public information so that users of this information have to purchase or have access to only one type of equipment to access all types of Federal information available in that format.
- Determine the public information needs of specific user segments and disseminate information in formats _most_ easily accessible for that user segment.

IMPLICATIONS:

It is increasingly evident that electronic collection, organization, and dissemination of public information is becoming the preferred means for information management in many agencies (Sprehe, 1984, p. 355):

> The Department of Agriculture (USDA) has issued a request for proposals for a department-wide electronic dissemination of information contract. There will be a single contractual vehicle for dissemination of all USDA information that is electronically disseminated. It is likely to be a large vehicle, and it is certainly an experience that is being closely watched by other Federal agencies because of its magnitude and the fact that USDA has had to address a lot of fundamental policy questions which so many other agencies will face.

But questions may be posed: Is the USDA then setting information policy on its own without guidance from appropriate Federal agencies and the Congress? How will such activities enhance or detract from public access? These and similiar questions will not be answered until _after_ the systems are implemented--at which time it may be too late to redesign them.

Implications from such activities relate to the extent to which Federal electronic information systems conform to the Privacy Act and the Freedom of Information Act, and provide for adequate bibliographic control over public information and access by the public. Legislation is needed to insure safeguards over such information for public access and availability, and to determine the degree of public ownership over such information _after_ it has left the direct control of the Federal government.

The degree to which electronically based public information will, in fact, be made available and accessible to the public is a matter of debate. Currently, the GPO depository library system does not distribute machine-readable data files and the vast majority of depository libraries would be unable to do much more with such files than archive them for the public. Storing machine-readable data files in depository libraries will not make the information they contain accessible and available to users of public information.

NAME OF ISSUE: What criteria should be followed by the Government when selecting information technologies for use in the provision of public information?

BRIEF DESCRIPTION:

Criteria currently used for selecting a specific information technology for use in the provision of public information appear to be dominated by cost factors. Individual agencies apparently are free to develop information services and products as long as they can justify the expenses for such services in light of their agency mission. Because the agencies also make individual decisions both about contracting information services to non-Federal vendors, and the type of information technology to be used as the carrier of public information, these can become non-comparable and non-interchangeable across agencies.

As an example, in Fall 1984, the Bureau of the Census began distribution of the City-County Data Book in diskette format for personal computers; NTIS also began distribution of the 1,000 "best sellers" available in a floppy diskette format. However the standards for these diskettes in terms of operating systems, density, and size is not clear. Similiar problems of standardization can be identified with the Library of Congress' involvement in the use of optical disc storage devices (Hahn, 1983).

The selection of information technologies is related to the standards used in the creation and use of those technologies. For instance, selection of 5 and 1/4 inch floppy diskettes as a carrier of public information assumes that the information on that diskette is standardized in certain formats and that there is a degree of compatibility among all diskettes distributed for public information. Existing standards from the National Standards Institute (ANSI) and Federal Information Processing Standards (FIPS) can assist in the selection of information technologies, their format, and content, only if considered in light of user information needs and available hardware/software.

OPTIONS:

- Develop administrative procedures whereby any agency or office wishing to use specific types of information technology must obtain prior approval that the information is intended for public dissemination
- Allow a decentralized, "market-driven" approach to the selection of information technologies and assume that those technologies selected will either meet user needs (and flourish) or not meet user needs (and be terminated)

- Identify specific criteria by which information technology will be selected as a means to disseminate public information; possible criteria include:
  - a. cost of the technology
  - b. response to user demands for specific forms of technology
  - c. degree of public availability to the technology
  - d. degree of compatibility with existing government information technologies
  - e. flexibility of the technology to adapt to rapidly changing technological advances

IMPLICATIONS:

Identifying criteria for the selection of information technologies to collect, organize, and disseminate public information requires consideration of user needs and the degree to which such systems establish barriers to gaining access to public information. System components which assist a user to learn how to use the system, provide summary information on how well the system was used, and offer self-diagnostics for user training and support are feasible but are infrequently provided.

The argument to allow the market to determine which information systems should survive and which will flourish is oftentimes an excuse for not making difficult policy decisions about which type of information systems best meet the needs of specific user groups. Given the current vacuum of authority and enforcement for such decisions, non-standardized, incompatible systems are likely to develop. In such an environment, only those individuals or organizations with both the resources and expertise to design interfaces between and among systems will be able to gain access to increasing amounts of public information in electronic format.

The implications of establishing standardized criteria are considerable. A user of public information may require access to and knowledge of multiple information technology devices to gain access to related information. There are numerous formats and operating systems which are incompatible with each other in the area of personal computer diskettes and operating systems. The existing decentralized, market and cost driven approach to selecting information technologies for disseminating public information without regard for standardized criteria is likely to have unequal effects on users' access to public information.

Congress must carefully monitor developments related to the deployment of information technologies in the Federal government. Simply listing the name of the system and its cost (as done in a number of GAO and OMB reports) does not assess the proposed system impacts on access to public information. Hearings may be necessary to sensitize both Federal officials and the public to the impact of information systems on public access.

NAME OF ISSUE: To what degree is the Federal government responsible for providing training or increasing the competency of user segments and public information intermediaries (such as information brokers and libraries) to access adequately public information available through various information technologies?

BRIEF DESCRIPTION:

Responsibility for providing tools to gain access to public information, e.g., technological literacy, is a critical factor in the degree to which information technology does or does not increase access to public information.

Despite the growing emphasis of the Federal government to place information in various technological delivery systems, little overall effort has been made to explain how the end user can effectively exploit the information or learn to manipulate data within that information system.

Once again, the decentralized development of information policy has resulted in inconsistencies across agencies. For example, the Bureau of the Census has a very successful Data User Services Division that provides a large number of seminars and other training services that are provided "free," i.e., Federally subsidized, to the public. Other agencies, with significant responsibilities for the dissemination of public information, such as the GPO and the Department of Energy, have devoted significantly less resources to support such activities.

A number of for-profit organizations in the information sector, such as DIALOG, provide excellent on-going training seminars to insure that users or intermediaries of their system can increase their skills for extracting the required information from the system. Similiar examples where the Federal government provides such training can be seen from the Bureau of the Census. Increasing awareness and developing specific skills related to using Federal information services and products may make the difference between making public information available versus merely "accessible."

OPTIONS:

- Include strategies to increase public awareness and training of specific Federal information systems and products at the time of the design of the information service, and consider them as normal "costs" for system development.
- Contract marketing and user/intermediary training of Federal public information services and products to other stakeholders in the information sector.

- Let user demand dictate the need for awareness and training about specific Federal information services and encourage stakeholders to respond to these demands.

IMPLICATIONS:

To assess this issue and its options effectively two separate areas should be considered: (1) the role and responsibility of all Federal agencies which collect and disseminate public information, and (2) the role and responsibilities of clearinghouses and the GPO which are specifically charged with specific public information dissemination activities. There must be a distinction between "public information activities" of departments and agencies versus legislatively-mandated "public information dissemination" of clearinghouses. Training activities for each will vary in light of the agency's mission.

Since the decision has, *de facto*, been made to increase the amount of public information issues in electronic formats, there must be a corresponding effort to train and assist users in how to access such data. Federal officials who state that public information has greater accessibility in electronic formats probably have not had the opportunity to be handed a machine-readable data file and attempt to obtain specific population data from, for example, a Bureau of the Census Summary Tape File (STF). Such retrieval *cannot* be done without an informed and skilled intermediary, appropriate hardware and software, and significant amounts of time.

Thus, implications from these options must be considered in the context of the specific mission of the agency. Congress may wish to review the information dissemination requirements and objectives of specific agencies and compare them to resources budgeted. Further, direct funding, or contracting, for intermediaries to assist users should be considered as a normal resource allocation for those agencies specifically charged to disseminate public information. Merely providing public information to intermediaries (such as libraries) does not insure their access and availability to users (see Topcs for Further Research in Appendix 4-10).

The Economics of Public Information

NAME OF ISSUE: To what extent should Federally provided public information be considered as a commodity or as a societal good?

BRIEF DESCRIPTION:

The key philosophical issue to be resolved regarding public information and its access is the degree to which it is to be considered as a commodity or as a societal resource. For-profit organizations in the information sector see public information as a commodity which should be bought and sold in the market place. As a commodity, the marketplace should make the final determination on public information's value and, thus, cost.

The view that public information is a societal good holds that all user segments of the public contributed equally to costs related to the collection and organization of the information. Therefore, the entire public should be able to gain access to and use the information. The view of public information as a societal good assumes that any restriction on the public's ability to identify, access, and use this information may reduce overall societal "progress" and productivity.

Each position makes assumptions about:

- the importance of public information for national "progress"
- the potential for selling the information
- the profitability of the information

- the rights of the public regarding public information
- the responsibility of the Government to encourage the maintenance of an informed electorate

Clearly, information production, organization, and delivery practices that result from each position are different. However, the notion that information is a "capital resource," i.e., an investment, can provide some common ground between the two positions. This view suggests that public information can be seen as a capital resource providing for the future investment of both the market and the societal good. Resolution of this issue is necessary before attention can be given to a number of other policy issues.

OPTIONS:

- Establish cooperative information services/products arrangements between the Federal government and members of the information sector where the Government guarantees a "basic" provision of information services. Additional enhancements on that service may be established and priced accordingly by a contracting organization from the information sector.
- Create an advisory body that can review the various public information services and products of the Government and assess the degree to which those services and products represent commodities (i.e., services and products that benefit specific segments of society) rather than resources (i.e., services and products that benefit a number of segments of society).
- Reconsider OMB Circular A-76 on contracting of services to other stakeholders in the information sector in light of information considered as a commodity or as a public good.

IMPLICATIONS:

The dilemma can be succinctly stated as: "How can the Government enhance access to public information and its use while at the same time, recovering as much of the economic value of that information as possible?" As suggested earlier in this section, the trade-off is one between efficiency of Government and effectiveness of user access. Yet, it should be remembered that only recently has the Federal government prescribed that information services and products be "cost-effective."

Implications from choosing one position over the other entail severe risks for policy makers and the public in areas of privacy of information, balance of powers within the Federal government, and overall national productivity. Thus, new models which incorporate both economy _and_ effectiveness are required. A key implication of a revised model would be to select the information carefully that is intended as public and then enhance the effectiveness with which it can be accessed and made available. But, the determination of what constitutes "public information" should not be left entirely to the Government. Currently, there is the sense to define public information broadly, but then provide little bibliographic control, user assistance, and delivery for that information.

Future developments in information technology and existing laws and regulations mitigate against improved access and availability to public information. For Congress _not_ to examine and revise existing laws and regulations related to public information and the effects of technology on that provision is a _carte blanche_ for further increased Executive authority and dominance in the design and implementation of economy-driven information policies.

NAME OF ISSUE: How should the Federal government price public information?

BRIEF DESCRIPTION:

The Office of Management and Budget and other Federal agencies have developed policy statements governing their pricing formula for information services and products. However, throughout the Federal government there is some confusion about types or categories of information services and products and whether the information service or product is intended for public dissemination. Further, there is confusion about pricing and differentiating between the information product as opposed to the services related to the support and development of that product. Given these factors, pricing policies must be established, prior to the development of the various information services and products created by the Federal government, rather than vice versa.

Terminologies used by different Federal agencies related to pricing include "cost-recovery," "self-sufficiency," "free," and others. Cost structures vary widely within the Government: a publication that is for sale from the Government Printing Office may be obtained free directly from the issuing agency or at a different price; microfiche purchases among the GPO, ERIC, and NTIS are calculated differently; and methods for computing the cost for the duplication and sale of a machine-readable data file vary widely.

Further, there is general agreement that the Federal government should avoid pricing structures that encourage unfair competition with other stakeholders in the information sector. However, "unfair competition" is rarely defined or considered in the context of a specific market segment of the public. In short, "unfair competition" for Federal pricing of a machine-readable data file for the business community may be appropriate pricing for scholars and researchers. Thus, a complicating issue becomes: "How can pricing policy be based on different user information needs without the Government privatizing the information or developing artificial price structures?"

OPTIONS:

- Establish policies on the type and level of value added enhancements that the Federal government can attach to information and information systems intended for provision of public information on a case by case basis. Additional enhancements of value added features on that information would be priced on a standardized guideline.
- Determine the maximum level of value added enhancements that the Federal government will provide for any information service and product, given the mission of the agency. Additional enhancements of the information service or product would depend on the demand for such enhancements and the desire of other stakeholders in the information sector to meet that demand.
- Identify levels of public information in terms of pricing (e.g., information to be provided "free" to users, information to be provided on a "cost-recovery" basis, or information provided if available at a negctiated price) rather than treating all types of public information (regardless of format, collection cost, etc.) as equal.
- Establish a "voucher system" whereby users of public information are given the opportunity to use vouchers to obtain a pre-determined amount of items from the Government containing public information, regardless of issuing agency.

IMPLICATIONS:

A number of aspects of this issue should be considered, the pricing set by (1) statutory law (e.g., that contained in Title 44, USC), (2) user charges (OMB Circular A-25), and (3) individual agency determinations of pricing that are possible because of ambiguous statuatory or regulatory statements (e.g., NTIS and Bureau of the Census). The pricing policy of the GPO is based on the "cost as determined by the Public Printer plus 50 percent" (44 USC 1708). However, the GPO cannot strictly adhere to the requirement. Costs related to warehousing, etc. are difficult to ascertain and the sales potential of a title cannot be precisely determined.

Thus, different pricing structures are interpreted differently by different agencies. A key implication is the confusion between publications versus programs that must be either self-sufficient or cost-recovery. NTIS, must be self-sufficient at a program level but it can recover losses from one product by the success of another. Since cost recovery pricing for machine-readable data files may be exorbitant for an individual user, self-sufficiency at an agency level makes more sense than at a product or publication level.

Federal officials may see price structures based on a voucher system or on the degree to which the Government provides value added enhancements as too cumbersome. Trade-offs between the costs for administering such pricing structures and the degree to which user access and awareness are increased would have to be examined.

Two critical questions arise: (1) which costs should be included and which excluded in the pricing of Government information, and (2) should the charge be inflated to a "comparable" market value? Answering the second question in the affirmative increases the likelihood that information gaps will continue or expand and abrogates the responsibility of the Government to insure equal access to public information. Indeed, an equal opportunity statement might be considered:

> the Federal government shall not deny access to public information to any individual on the basis of race, age, financial condition, cost of that information, technological literacy, or access to appropriate information intermediaries.

Paradoxically, similiar statements are considered proper and appropriate for areas such as hiring practices but have not been considered as appropriate in the area of information policy development.

Circulars A-25 and A-76 as well as Title 44, USC, should be reconsidered as a basis for pricing Federal information services. Further, the pricing structure cannot be excluded from the context of the degree to which public information is a societal good or a commodity to be bartered in the open market. Both Federal officials and for-profit stakeholders in the information sector should consider the degree to which public information is a capital investment that encourages its use as both a societal good and as a commodity to be bartered.

Public Access and Availability to Public Information

NAME OF ISSUE: What Federal information does the Government have a responsibility to make accessible and available to the public?

BRIEF DESCRIPTION:

Instances where certain types of information are not made available by one Federal agency but are made available from another Federal agency, and perhaps at a different cost, occur on a regular basis. The phrases "government information" and "public information" are oftentimes used interchangeably. Even the phrase "public information" may be too broad to allow a meaningful discussion to occur about the Government's responsibility to make that information available and accessible to the public.

Philosophically, one can say that all public information should be made available to the public through stakeholders in the information sector, but, realistically, all Federal public information may not be needed by the public and there might be inadequate resources available to make such information available and accessible. Further, other stakeholders in the information sector may not disseminate certain types of public information that are perceived as having minimal profit potential.

Again, a critical issue relates to preventing the Government from making sole determination about what is public information, how that informatin will be made available, and who will have access to it. The more that the Government controls these issues, the more information becomes private and only selectively available, and the more the Government can "reward" its supporters and "punish" its adversaries by controling access to such information.

OPTIONS:

- Identify specific categories of Federal public information, and develop policy covering: (a) the degree to which the Federal government has responsibility to make that information available and accessible to the public, (b) the level of Federal resources that can be committed to making that information available and accessible, and (c) the appropriateness of other stakeholders in the information sector providing value added enhancements to the information for increased access and availability.
- Require the agencies creating or collecting information to produce a scaled-down "environmental impact statement" that specifies what

information is to be collected, the purpose for the collection and organization of the information, the types of information that can be considered as "public information", and the mechanisms that the agency will provide to insure access and delivery of the public information, prior to the establishment of the information service or product.

- create or strengthen existing legislation that safeguards the individual's right to public information, e.g., Freedom of Information Act, the Privacy, Act, etc.
- Encourage a decentralized approach whereby the individual agency (operating under some overall Government guidelines) determines what information is to be made available, given (a) the mission of the agency, (b) the demand for the information, and (c) the costs associated with provision of the information.

IMPLICATIONS:

The expectation from the public is that the vast majority of Government information is public, when in fact much is not. Further, much of the public information is inaccessible and unavailable to the public because it lacks bibliographic control and effective delivery systems. Existing policies based largely on the Paperwork Reduction Act of 1980 and OMB Circular A-76 encourage the privatization of public information, but no evidence exists to support the argument that privatization of public information will increase public access. Indeed, privatization of public information is cost-driven and not public access-driven.

A determination of what public information is to be made accessible and available should be considered in light of user information needs. Such is rarely the case when agencies make decisions of what to publish (regardless of format). As long as user information needs are inadequately considered in the determination of the public information to be produced, the citizenry is likely to have continued low awareness of public information and the value of this information to resolving their information needs.

Title 44, USC, does not adequately direct publishing activities related to information technologies such as machine-readable data files. Section 105 of the revised Copyright Law (1978) also contains a gap which permits the public to be "deprived of access to immense amounts of information generated in the national interest" (Schnapper, 1984, p. 204). These deficiencies have provided some Executive agencies with an opportunity to claim that their information services and products cannot be construed as a government publication within the context of the USC.

These deficiencies result from inadequate authority from the JCP to effectively revise either Title 44 or its own regulations, as well as to enforce existing statutes. What to be included or excluded as "public information" has become a secondary issue within Governmental squabbling over who has authority to develop and enforce information policies. Although creative tension among the various Federal players regarding information policy is both necessary and healthy, the current situation may have become dysfunctional for representing the concerns of the citizen in insuring adequate access to public information.

NAME OF ISSUE: Should Congress reconsider a revision of Title 44, USC, or proceed on a "piecemeal" basis with the development of Federal policy governing publication and dissemination of public information?

BRIEF DESCRIPTION:

Title 44, to a large extent, is based on the Printing Act of 1985. The proposed revision in the late 1970s illustrated the problems in trying to revise this legislation without a firm conceptualization of overall Federal philosophy regarding information policy. In addition, reactions to the attempted revision demonstrated the diverse interests of various stakeholders in the information sector related to Federal information policy.

Piecemeal consideration of Federal information policy suggests greater emphasis on vertical policy development and minimal horizontal coordination. An example of this process is the recent attempt of the Joint Committee on Printing to establish new regulations (McClure, 1984b) which after much discussion, in the Fall of 1984, are being reconsidered (see Chapter 3). Effective revision of Title 44, or a coordinated decentralized approach both require greater consideration of philosophical issues and less consideration on the political agendas of individual agencies and for-profit stakeholders in the information sector.

OPTIONS:

- Continue existing reliance on Title 44 for the general Congressional development of information policy, recognizing that continued disagreements between Title 44 policy and OMB policy are likely.
- Develop guidelines for the revision of Title 44 to insure better planning and coordination than that experienced in the 1978-1979 attempt to build a base of support for such a revision.
- Identify priority areas within Title 44 that call for immediate attention and develop legislative initiatives to amend them. Establish a bipartisan Task Force that includes Congressional and Executive membership to set an agenda for the specific areas of Title 44 to be revised.

IMPLICATIONS:

Stakeholders in the information sector still recall the attempted revision of Title 44 in the late 1970s. As a result, current issues and new challenges may be based on existing perceptions of its failed revision. Factors affecting the likelihood of revising the Title include:

- the outcome of the JCP's 1983 proposed Regulations/Guidelines
- the content of the "soon-to-be-released" OMB policy statements related to Federal information management
- the severity of the Federal deficit and the perceived importance of information-related policy vis a vis other policy issues

Revision of the Title as a whole would force a healthy and open debate about the implications resulting from such a revision. Piecemeal revision will encourage increased vertical rather than horizontal coordination of information policies.

Strengthening Title 44 could make the JCP and the GPO more powerful players in the development and administration of Federal information policy. Such an approach is likely to be opposed by for-profit stakeholders in the information sector as they recognize that the primary concern of the JCP and GPO is insuring access to public information as opposed to making a profit from information services and products. Indeed, loosers in the battle to strengthen and revise Title 44 would be the Executive branch and a number of for-profit stakeholders in the information sector. Both have powerful spokespersons for their positions whereas powerful spokespersons for the public are fewer and poorly organized.

Apparently, a primary hesitancy on the part of some Congressional officials to revise Title 44 is the perception that the JCP: (1) was unable to administer information policy in the past and is unlikely to do any better in the future, and (2) lacks adequate competencies to manage the new information technologies, witness the espoused inefficiencies at the GPO.

Thus, if revision of Title 44 is linked to strengthening the role of the JCP in information policy development, there may be limited Congressional support for such a revision.

NAME OF ISSUE: What is the role of the various depository library programs in the Government provision of public information?

BRIEF DESCRIPTION:

The Federal government currently operates a number of "depository" programs including: the GPO depository library program (1,391 libraries), the Patent Office depository library program (53 libraries), Bureau of the Census depository libraries (125 libraries), Geological Survey and National Oceanic and Atmospheric Administration depository programs related to maps and charts, and Department of Energy programs. There is minimal coordination, in terms of geographic location, types of public information distributed, and the specific missions regarding provision of public information among these programs.

Although the GPO depository library program was expanded as a result of the Depository Library Act of 1962, the program relies primarily on the Printing Act of 1895 for much of its statutory basis. In short, the program has not been kept up-to-date with the growth of the Federal government, with the advancements in information technology, or with meeting the information needs of the public (Kadec, 1984, p. 416):

> ...the Library Program Service is a stepchild within GPO, and its woefuly behind the state of the art in applying technology to its own internal processes and to facilitating the delivery of and access to the information it processes.

As Figure 4A-2 suggests (contained in Appendix 4-10), recent studies regarding the effectiveness of the GPO depository program indicate its limited effectiveness.

The breadth of its stated purposes and the lack of clear goals and measurable objectives encourages the depository library program to be all things to all people. Chronic underfunding, reduced GPO and library staffing, and large commitments for coordinating the printing and distribution of a broad range of Federal agencies minimizes the depository programs' potential effectiveness.

Further, despite its statutory responsibility, "Government publications...shall be made available to depository libraries through the facilities of the Superintendent of Documents for public information," (44 USC 1902) many agencies successfully ignore the program as a means of making available public information. Such attempts are justified on various waiver provisions in sections 501 and 504 of Title 44. In addition, recent interpretations (INS v. Chadha, 1983) may intensify the difficulties of basing information policy on Title 44.

Depository programs such as the one administered by the GPO are beset with problems affecting their efficiency and effectiveness, as well as the extent to which the public is aware of and uses them. Discussions of their role by Federal officials typically focus on an "ideal," i.e., what they can do in theory, as opposed to the "reality," i.e., what they are currently doing (effectiveness) and how well dissemination is being done (efficiency). Until Federal officials examine depository library programs in terms of meeting information needs they are not likely to be effective disseminators of public information.

OPTIONS:

- Establish an enforcement agency or procedure to encourage Federal agencies in all three branches of Government to comply with existing legislation and regulations related to participation in the depository library program.

- Determine if depository library programs are, in fact, to be the primary distributor of public information from the Federal government; if so, provide adequate funding and support for such to occur.
- Coordinate the establishment of "depository library programs" in other Federal agencies whereby the agency is required to distribute public information directly to the depository libraries.
- Eliminate or restructure the depository library program and substitute a National Library or clearinghouse with selected satellite libraries in each of the various states--funded directly by the Federal government to provide government information to the public (Hernon and McClure, 1984, pp. 314-340).

IMPLICATIONS:

The role of the depository library programs must be considered as part of any overall assessment of Federal information policy. The narrower the definition of public information the smaller the base for information to be disseminated through these programs. Expansion of the scope of these programs without adequate funding and support, especially in the area of information technologies, may present libraries with responsibilities beyond their abilities. Coordination of the activities and objectives of the various depository library programs may result in significant cost savings in the administration of information dissemination activities for other Federal agencies.

Evidence suggests limited effectiveness of the GPO depository library program (Hernon and McClure, 1984). But such evidence is as much the result of Federal neglect as any other factor. Piecemeal revision of Title 44, USC, regarding the depository library program may be supported if it is linked directly to enhancing the degree to which the program can _actively_ enhance the Government provision of public information. Improvement of this program would benefit most stakeholders in the information sector and can be promoted as a compromise approach that (1) improves economy of Government, and (2) increases user effectiveness for accessing public information.

Federal officials have been concerned only with providing publications for depository dissemination (input to the depository systems) and have not considered the quality of the services and products resulting from the programs. The lack of meaningful inspection of the GPO depository library program (and one can assume the others) encourages this view both within the Government and within the library profession. Because of the reduced institutional funding at many depository libraries and the failure of the Government to assist in the servicing of these collections, some depository libraries are re-considering the appropriateness of their status as a depository.

If the various depository library programs are seen by Federal officials as a primary means by which public information is made accessible and available then steps must be taken to enhance and support that role. If, on the other hand, the depository programs are continued to be ignored and judged only on measures related to economy of Government, a potentially significant mechanism to enhance access and availability to public information will be lost.

Ranking and Synthesis of Issues

This review and analysis of significant issues suggests that some of the issues have greater importance and impact than others. As a means to rank the _relative_ importance of the issues, the five criteria used for selecting the

TABLE 4-1

RANKING THE RELATIVE SIGNIFICANCE OF ISSUES

Brief Statement of Issue	Potential for Producing Significant Changes in Federal Power Relationships	Potential for Producing Signigicant Changes in Power Relationships Among Non-Fed. Stakeholders	Potential for Increasing Access to Public Information	Potential for Exploiting Information Technologies	Potential Impact on Existing Legislation and Regulations	Score*
1. Centralized or Decentralized Information Policies?	High	High	High	Moderate	High	14
2. Formal Mechanisms to Encourage Dialogue about Information Policies?	Low	Low	Moderate	Low	Moderate	7
3. Role of the Office of Management and Budget in the Development of Information Policies?	High	Moderate	Moderate	Moderate	Moderate	11
4. Federal Responsibiliies for Legislating and Regulating Access to Public Information?	High	High	High	High	High	15
5. Bibliographic Control over Public Information?	Moderate	Low	High	Moderate	Low	9
6. Administer Federal Information Activities as a "Business"?	High	High	Moderate	High	Low	12
7. Federal Emphasis on the use of Information Technologies Related to Public Information?	Moderate	High	Moderate	High	Low	11
8. Criteria for Selecting Information Technologies in the Provision of Public Information?	Moderate	Low	Moderate	High	Low	9
9. Federal Responsibility for Providing Training to User Segments and Intermediaries?	Low	Low	Moderate	Moderate	Low	7

TABLE 4-1

(Continued)

Brief Statement of Issue	Potential for Producing Significant Changes in Federal Power Relationships	Potential for Producing Signigicant Changes in Power Relationships Among Non-Fed. Stakeholders	Potential for Increasing Access to Public Information	Potential for Exploiting Information Technologies	Potential Impact on Existing Legislation and Regulations	Score*
10. Extent that Public Information Should be Considered as a Resource or Commodity?	High	High	High	Moderate	High	14
11. Federal Pricing of Public Information?	Moderate	High	Moderate	Low	Moderate	10
12. Determining What Public Information to be Made Accessible and Available to the Public?	Moderate	Moderate	High	Moderate	Moderate	11
13. Revision of Title 44, USC, or Piecemeal Revision?	High	Moderate	High	High	High	14
14. Role of the Depository Library Programs in the Provision of Public Information?	Moderate	Moderate	Moderate	Moderate	High	11

* Scores computed on the basis of:

High = 3:	Requires immediate Congressional resolution/monitoring
Moderate = 2:	Requires regular Congressional monitoring
Low = 1:	Congressional attention would be useful but is not immediately necessary

issues originally were used to score the relative importance of each. The assessment provided in Table 4-1 is a subjective one based on:

- the evaluation of the literature as reported in Chapters 1-3
- interviews conducted with various Federal officials
- the political, economic, and technological climates as of Fall, 1984

Further, the assessment assumes that the criteria have equal importance and that the issues are relatively independent from each other. Despite these assumptions, the assessment offered in Table 4-1 is intended to (1) be a vehicle to better compare and analyze the issues, (2) summarize the analysis provided in this section of the chapter, and (3) provide a framework for additional analysis of the issues.

The assessment suggests four categories of issues in terms of their relative importance (ranked from highest importance to lowest importance):

Category #1: 14-15 Points*

- Federal responsibility for legislating and regulating access to public information
- centralized or decentralized information policies
- extent that public information should be considered as a resource or commodity
- revision of Title 44, USC, or piecemeal revision

Category #2: 11-12 Points

- administering Federal information activities as a "business"
- role of the Office of Management and Budget in the development of information policies
- Federal emphasis on the use of information technologies related to public information
- determining what public information is to be made accessible and available to the public
- role of depository library programs in the provision of public information

Category #3: 9-10 Points

- Federal pricing of public information
- bibliographic control over public information
- criteria for selecting information technologies in the provision of public information

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* Assignment of points is arbitrary and explained on Table 4-1.

Category #4: 7 Points

- formal mechanisms to encourage dialogue about information policies
- Federal responsibility for providing training to user segments and intermediaries

Another method to consider the results of Table 4-1 is to identify only those issues assessed as having "high" potential for increasing access to public information, these would include:

- centralized or de-centralized information policies
- Federal responsibilities for legislating and regulating access to public information
- bibliographic control over public information
- extent that public information should be considered as a resource or commodity
- determining what public information is to be made accessible and available to the public
- Revision of Title 44, USC, or piecemeal revision

Given the thrust of this report, these six issues take on increased importance.

If those issues included in the category of highest importance (scores of 14-15) and those assessed as having highest potential for increasing access to public information are considered as a group, two primary issues are identified:

- what Federal structure balances trade-offs between efficiency and effectivenss for Government provision of public information best?
- what legal bases and responsibilities of the Federal government will insure adequate access and availability to public information?

These two issues provide a summary and synthesis of the most significant issues discussed in this section and suggest possible policy strategies.

Analysis of Options

The preceding section identified fourteen key issues, described possible policy options for each issue, and reviewed implications of these options in terms of public access, information technology, and legislation and regulations. This section will synthesize those options into three overall policy strategies for Government provision of public information and assess the impact of these policy strategies.

A review of the various options presented in the preceding section suggests that the options have varying levels of compatibility with other options. For instance, the option of formalizing and expanding the policy making role of the Office of Management and Budget enhances the viability of the option to develop centralized coordination of bibliographic control of various government information resources. However, it also minimizes the likelihood that Federal agencies will be able to construct unique pricing schedules.

The formulation of the following three policy strategies is based on a compatibility/incompatibility analysis of the options listed in the previous sections. The following categories of options were identified:

- _dependent options_: in order for the option to be incorporated as part of an overall policy strategy, a predicator option must first be selected
- _neutral options_: the option is compatible with other options including different predicator options
- _predicator options_: the option makes basic assumptions which, by definition, selects the types of dependent options that can be included in the policy strategy

The authors examined various combinations of the options in light of (1) the compatibility/incompatibility of the options, (2) the likelihood for increased political pressures during the second Reagan administration to reduce Federal spending, and (3) increasing effectiveness and decreasing costs of electronic information systems. This approach produced a clustering of options into three basic policy strategies. Options provided for each policy strategy are representative and not comprehensive. Portions of the three policy strategies may be interchanged with other strategies, however, the basic policy strategies are differentiated as follows.

Policy Strategy 1: Developmental Decentralization

Purpose: The intent of this policy is to increase the efficiency with which Federal information is collected, organized, disseminated, and managed, based on the tenets of the Paperwork Reduction Act of 1980.

This policy strategy is marked not so much by its policy initiatives as it is by policy avoidance. In this scenario, development of information policies is politicized among competing Federal agencies with one or two agencies eventually claiming primary responsibility for policy development. Although the scenario ostensibly appears to provide for the development of a more centralized control over information policy development, major decisions regarding the implementation of information policy are likely to remain at the individual agency level.

Further, this policy strategy recognizes a perceived low priority of issues related to Government provision of public information and the effects of technology on that provision in light of competing issues related to national security, economy, and social programs. Information policy is developed by middle level Federal officials primarily in response to demands placed upon the Government by competing stakeholders in the information sector.

Policy options which can be incorporated into this policy strategy include:

- continued development of OMB as a central player in the design and development of information policy with some possible erosion of Congressional authority over Federal information policy
- enforcement of existing regulations that require Federal agencies to maintain adequate bibliographic control over information resources produced
- encouragement of government information activities to be administered in a business-like fashion, i.e., efficiently
- strengthening guidelines and standards for the purchase and use of information technologies primarily on the basis of initial cost and increasing compatibility among Government systems
- allowing individual Federal agencies to design and implement user support services based on the mission of the agency, user demands, resources available to support such services, and costs for such support
- regulating, as opposed to legislating, (1) relationships among the Federal agencies and between the Federal government with other stakeholders in the information sector, and (2) responsibilities and procedures for public information collection, organization, and dissemination in response to societal demands
- pricing public information to be self sufficient, i.e., to cover costs for its collection, production, dissemination, and servicing
- assuming that the various depository library programs (as currently organized and administered), the Freedom of Information Act, and the

Privacy Act provide a "safety net" of equal opportunity to adequately access public information

This policy strategy is passive and ambivalent in that it allows for "benign neglect" of basic issues but allows, by default, continued development of information policy that is driven primarily by Government economy and information processing for improved Government efficiency.

Policy Strategy 2: Coordinated Disseminator

Purpose: The intent of this policy is for the Federal government to assume responsibility for adequate provision of public information and insure that all user segments have equal opportunity to public information.

This policy strategy is an activist stance in which the Federal government assumes primary responsibility for providing access to public information. An attempt is made to de-politicize the Federal collection, organization, and dissemination of public information and a bi-partisan strategy is taken by Federal officials to insure wide access to public information by the various user segments.

This scenario may require the Government to reduce the quantity of information intended for public dissemination but significantly improves the access and availability to information which is intended for dissemination. Public information is seen as a social good, owned by the public at large, and for which the Federal government is held responsible for providing _basic_ levels of access to user segments _equally_. Policy options that can be incorporated in this policy strategy include:

- establishing an "independent agency" under the Executive branch with safeguards that insure Congressional oversight; the agency would be responsible for the design, implementation, and enforcement of information policies and procedures
- clarifying at the time of establishing services, products, or systems, for public information collection or creation the degree to which they are to be made available for public information
- accepting the notion that the effective collection, organization, and dissemination of public information can be accomplished efficiently but that effective provision of that information may require direct Federal support and in some cases, subsidies to intermediaries or stakeholders from the information sector
- coordinating and re-organizing the depository library programs and funding them directly, to (1) exploit available information technologies, (2) increase local bibliographic control over public information, (3) increase the Public's awareness of the types and content of public information, and (4) assist users to better exploit available public information
- making public information accessible and available in traditional paper copy as well as through technological formats to minimize the impact of technology on information gaps in American society
- determining public information needs of specific user segments and disseminate information in formats most easily accessible for that user segment
- promoting and financing user training and support services for public information services and products

- varying the pricing of public information, e.g., subsidized, self-sufficient, or cost-plus, depending on user segment information needs and type of public information

This policy strategy charges the Federal government with *active* dissemination responsibility to insure the public's access to public information. It recognizes the need to de-politicize information policy and to have Federal information services be *user* driven. However, it is possible that *less* information might be made more effectively accessible to *more* user segments.

Policy Strategy 3: Information Contractor

Purpose: The intent of this policy is to remove primary responsibility from the Federal government for the provision of public information and to encourage other stakeholders in the information sector to assume such responsibility.

In this policy strategy the Federal government is limited in its responsibility to provide public information to a basic *minimum* level. Non-Federal stakeholders in the information sector are encouraged to provide a broad range of value added enhancements to public information and price those enhancements in terms of open market factors. Public information is considered to be more of a commodity rather than a societal good, although some provision is made to insure a *minimum* level of access to those *seeking* public information.

Government information services and products are designed not to compete with existing or potential services/products produced by non-Federal stakeholders in the information sector; many of the existing Government information services and products would be contracted to non-Federal stakeholders (either for-profit or not-for-profit); and the Government's role in dissemination of public information would be significantly reduced.

Components that could be incorporated in this option include:

- establishing a regulatory agency charged with the responsibility of managing and coordinating non-Federal stakeholders' collection, organization, and dissemination of public information
- identifying minimum level value added enhancements to be make by Federal agencies on information services and products; enhancements beyond such a minimum level would be contracted to non-Federal stakeholders
- promoting technology development of Federal information systems and products through low-interest loans, or other subsidies
- accepting the assumption that public information should be managed in a businesslike fashion, i.e., profit-making whenever possible
- expanding OMB directives A-76 and A-25 to allow cooperative arrangements between the Government and other stakeholders in the information sector; information services could be contracted outside the Government and then "sold back" on a "no cost" clause and provided to other information stakeholders and the Public on an "anti-competition" or "non-monopoly" clause
- eliminating Title 44, USC, or significantly changing it such that the GPO is modeled and operated similarly to the NTIS
- allowing a decentralized "market driven" approach to the selection of information technologies and assume that those technologies selected by the agencies or the contractors will either meet user needs (and flourish) or not meet user needs (and be terminated)
- establishing a voucher system for the depository library programs whereby the participating libraries can "purchase" the information services and products needed from the perceived most

effective/efficient source

- promoting awareness of public information, but relying on non-Federal stakeholders in the information sector to design and implement intermediary information services, user support systems, and direct user training

This policy strategy encourages open market competition to assist in the development of information technologies but attempts to provide for a minimum level of direct support for provision of public information. In some instances, existing Federal information services and products would have to be scaled down, contracted to non-Federal stakeholders, or eliminated.

Comparison of Policy Strategies

Each of the three policy strategies has strengths and weaknesses which can be identified by comparing them against a set of impact criteria. Such criteria include:

- effectiveness: how well will the policy purposes and activities be achieved? Is this a short-term or long-term solution to basic issues in dispute?
- efficiency: What are the likely costs, risks, and benefits of the policy strategy?
- equity: How are the costs, risks, and benefits distributed among various stakeholders?
- flexibility: How well can alternatives be applied to local circumstances and to what extent can they be reversed?
- implementability: How well can the options be implemented? Are they feasible? To what degree and from which stakeholders will opposition (if any) come?

These criteria have been used successfully in other policy analyses as a means to (1) categorize and compare trade-offs, and (2) make explicit differing values at stake in the policy decision (Ballard and Hall, 1984, pp. 41-42).

Tables 4-2 through 4-4 provide an assessment of each policy strategy with regard to these criteria. They have been applied to the three policy strategies to provide an overview assessment, are based primarily on the authors' review of the literature and subjective assessment, and are not intended to be "full-scale" analyses.

The summary assessments provided in each table suggest that numerous trade-offs are evident among the criteria. Further, the trade-offs differ not only among the criteria but also in terms of their impact on specific stakeholders. To illustrate this point four stakeholders, i.e., Federal agencies, not-for-profit intermediaries, for-profit stakeholders, and user segments were compared in terms of potential impacts resulting from each of the three policy strategies (see Table 4-5).

The impact analysis presented in Table 4-5 provides a sense of how the selection of one policy will have differing impacts on a broad category of stakeholders. However, each of the categories could be broken into subgroups. For example, the user segments could be further described in terms of information gathering behaviors as suggested in Appendix 1-2. Federal agencies could be further described by additional criteria such as their affiliation with one of the three branches of Government or by agency mission, and so forth. While Table 4-5 is suggestive of potential impacts, one must recognize that the impacts listed may vary within subgroups of the listed stakeholders.

The analysis of the issues, options, and policy strategies in the preceding sections of this chapter reveals a primary factor that also should be considered. While decision making can be defined as the conversion of

TABLE 4-2

SUMMARY ANALYSIS OF POLICY STRATEGY 1: DEVELOPMENTAL DECENTRALIZATION

Criterion	Assessment
Effectiveness	Tends to encourage issue or problem avoidance and increase overt confrontations among Federal agencies and between branches; a short term problem solving policy which may exaccerbate resolution of additional issues at a later date. Much of the legislative basis for this policy can be drawn from the Paperwork Reducation Act of 1980. Policy enforcement may be difficult due to agency turf skirmishes and middle level Federal official turnover.
Efficiency	The primary strength of this policy strategy is its ability to reduce overall Government expenses for information related activities. Economies in government costs will have to be assumed by users or other stakeholders to maintain or increase access to public information. There is little political risk for the Government and the resultant economies have current political benefits.
Equity	Non-Federal stakeholders in the information sector may obtain increased opportunities but will likely have to deal with a confusing and contradictory array of decentralized information policies and procedures. If user segments obtain improved provision of public information it will be as an unanticipated consequence of the policy and may require additional user costs to compensate for the government economies. Greater responsibilities for information management will be placed on middle level Federal officials.
Flexibility	Federal agencies may have wide latitude in the degree to which they address provision of public information since greater concern will be placed on costs and uses of technology. Agressive non-Federal information stakeholders may be able to exploit the policy at an Agency level if there is a sizable difference between the competencies of the stakeholder and the agency. Policies and procedures cannot be changed quickly.
Implementability	The policy can be implemented under existing legislation and regulations with some expansion and detail. OMB is "geared up" for additional responsibilities in this area and opposition to the policy may be forgotten or ignored in light of existing critical policy issues in areas of national security, budget deficits, and the role of social programs.

TABLE 4-3

SUMMARY ANALYSIS OF POLICY STRATEGY 2: COORDINATED DISSEMINATOR

Criterion	Assessment
Effectiveness	This policy stance confronts, directly, the issue of provision of public information and sets in motion a strategy that deals with both short-term and long-term issues. Because of its coordinated approach it may have a potential for administrative sabotage by dissatisfied agencies without enabling legislation that gives the coordinating body authority to enforce its decisions.
Efficiency	Costs for this approach may be higher than for policy strategy #1. Further, there are political risks for spending significant resources to re-structure information policy without significant cost savings. Non-Federal information stakeholders may see this policy as continued interference in their right to provide public information. Users will gain the most by not being held responsible for additional fees or resources to access public information.
Equity	Perceived equity of this policy will vary significantly among stakeholders and users. The primary benefits from the policy will (short-term) go to users, but benefits in terms of increased societal productivity and creativity may also result (long term). Depository Libraries will be benefited by this policy and non-Federal designers and producers of information systems will receive less direct benefits than in policy strategy #3.
Flexibility	The central coordination of this policy will decrease the flexibility and administrative options at an Agency level but will increase user flexibility and options in accessing public information. Non-Federal information stakeholders may have greater guidelines and regulations to meet in order to work directly with the agency given responsibility for coordinating public informatin dissemination. Policies can be changed more quickly than in options #1 and #3.
Implementability	This policy would require additions and changes to existing legislation and regulations. Constitutional issues related to separation of powers would have to be resolved in the organization of this coordinated "independent agency." Federal agencies with some independence in their information-related activities are likely to mitigate against the feasibility of this policy.

TABLE 4-4

SUMMARY ANALYSIS OF POLICY STRATEGY 3: INFORMATION CONTRACTOR

Criterion	Assessment
Effectiveness	This policy strategy confronts information policy issues directly. Short-term consequences of the policy may be to hinder public information provision for selected agencies and user groups; long-term effects of this approach could clarify the role of the Federal government in the provision of public information and provide an impetus for private development and expansion of information technologies.
Efficiency	A benefit of this policy strategy is the likely reduced Federal costs for provision of public information. But there are great risks in that once certain information services and products are "turned over" to non-Federal stakeholders they cannot be returned or could be returned in such an altered state that an entirely new information service or product might have to be developed. Efficiencies for the user of public information may or may not be enhanced depending on the individual contractors.
Equity	Two groups to benefit from this policy would be Federal agencies which could reduce the number of information services and systems to be operated directly and non-Federal information stakeholders (contractors) who could provide appropriate information servies and products. If agreements were made with contractors to insure minimum levels of equal access, the Public may be satisfied with the arrangement, but there is increased likelihood for creating or expanding information gaps.
Flexibility	The policy provides a compromise position between policy strategies #1 and #2 in terms of Federal agency flexibility in the provision of public information. If minimum levels of access cannot be guaranteed by the Federal government there would likely be opposition to the policy by spokespersons for various user interests. Non-Federal stakeholders will find this policy to have the greatest flexibility. Compatibility among contractual systems may not be high.
Implementability	Some changes in the existing legislation and regulations related to information policy would be necessary. However, politically, there may be more support for this policy than attempting wholesale revision of Title 44, USC, for example. Its adaptability is limited since the Federal government would reduce its control over implementation and enforcement of public information services.

TABLE 4-5

POTENTIAL IMPACTS OF POLICY STRATEGIES ON SELECTED STAKEHOLDERS

Stakeholders	Policy #1 Developmental Decentralized	Policy #2 Coordinated Disseminator	Policy #3 Information Contractor
Federal Agencies	-increased conflict among agencies and between Branches -Paperwork Reduction Act of 1980 can be used to justify activities -increased Government economies -increased compatibility among Government information systems -increased emphasis on agency information management activities -limited political risks and high political rewards	-increased centralized authority over information policy -requires additional changes in in existing legislation and regs. -same or decreased Government economies -requires authorization of upper administrative authority -significant political risks and low political rewards	-increased centralized authority over information policies -minor additional changes in existing legislation and regs. -increased Government economies -reduced direct control over dissemination of public inf. -dificulty of "guaranteeing" contractor performance over time -moderate political risks and unknown political rewards -must expand OMB A-76 and A-25 directives
Non-Profit Intermediaries (e.g. libraries)	-same ability to assist users and provide user support services -no improvement over bibliographic control of public information and information systems -possible improvement for networking and downloading of Government information systems -increased costs in identifying and obtaining technology based public information such as machine-readable data files	-increased responsibilities for training users -improved bibliographic control over public information and information systems -increased direct Government funding and/or subsidies to provide public information -increased cooperative ventures with Government that may replace some not-for-profit stakeholders	-increased assignment of costs to users for providing public information -reduced or no improvement of bibliographic control over public information and information systems -reduced number of public information services and products that can be disseminated unless a "voucher" system is used -increased incompatibilty and and access to contractor inf. systems and products -weakening of Title 44, USC
For-Profit Stakeholders	-increased opportunities for aggressive stakeholders -increased encouragement to provide value added services -increased complexity in dealing with different agencies and meeting their information needs -technology start-up costs can be passed along to users	-decreased opportunities to develop information systems for public information -decreased direct negotiation with individual agencies -long range increase in technology productivity and innovation due to open access to public information -reallocation of technology dev-resources to non-public information areas and problems	-technology start-up costs can be passed along to users -increased competition among stakeholders for contracts -increased likelihood for conflict of interests between those contracting for information servies and those stakeholders providing the services -increased innovation in the design of information systems for public information

TABLE 4-5

(Continued)

Stakeholders	Policy #1 Developmental Decentralized	Policy #2 Coordinated Disseminator	Policy #3 Information Contractor
User Segments	-access to public information remains the same but reduced availability -same or increased confusion over how to access Gvernment information -no central recourse or focus point for users to obtain assistance in accessing public information -same or increased costs to obtain public information -same or increased levels of incompatibility (in terms of user access) to Government information systems -same or decreased awareness of formats and types of public information	-reduced quantity of public information intended for dissemination -public information services and products targeted at specific user segments -increased overall access and availability to public information -increased use of intermediaries -encouragement of individual creativity and learning -encouragement of small businesses and capitalism -reduction in existing information gaps	-procedures to access the same type of information may change over time because of different contractors -increased costs and personal resources to access public information -dissatisfaction with what constitutes minimum level of access to public information -increased reliance on FOIA, Privacy Act, or other "safety nets" -increases likelihood of creating or expanding information gaps

information into action, the types of decision making, or the philosophy that drives decision making regarding Federal information policy deserves careful attention. Three types of approaches to decision making can be identified currently with regard to information policy development:

- political decision making: decisions are based primarily on power relationships among stakeholders concerning the issue; individual motives for self-advancement often take precedence over resolving the actual issues
- market based decision making: decisions are based on economic factors in which efficiency of Government operations dominates the resolution of the issues
- operations research decision making: decisions are based on a prescribed formula or algorithm in which specific factors are identified, defined, and applied uniformly for a number of decision situations

These approaches are not mutually exclusive, and can be made more useful if specific objectives to be accomplished and choices among competing sets of alternatives are identified prior to the analysis of issues, or options, and implementation of a policy.

These three different approaches to Federal decision making may be considered as means to develop each of the three policy strategies. For instance, the Department of Agriculture appears to be using a combination of policy strategy #3, Information Contractor, and market-based decision making. NTIS appears to stress political decision making and policy strategy #1, developmental decentralization. The Bureau of the Census might be characterized as using political-based decision making and policy strategy #2, coordinated dissemination as an information policy strategy.

Thus, it may be appropriate to develop legislation and/or regulations that allow individual agencies and departments to design their own information policy strategies from a menu of possible strategies previously approved by the Joint Committee on Printing, the Office of Management and Budget, or another such office, and in conformity with existing legilsation and regulations. Such an approach would provide for some central control and guidance over agency methods for the provision of public information dissemination, while at the same time providing agencies an opportunity to create policy strategies and employ decision making techniques best-suited for their particular situation and mission.

For purposes of analysis, the three policy strategies have been tightly differentiated. But as suggested earlier, some options may be interchanged among the strategies if they are neutral, i.e., do not require a predicator option. Examples of neutral options that might be interchanged among the strategies include:

- establishing mechanisms that encourage continuing dialogue among various stakeholders in the information sector
- clarifying at the time of establishing services, products, or systems for public information collection or creation the degree to which they are to be made available for public dissemination
- enforcing existing laws and regulations regarding bibliographic control of public information
- establishing and enforcing criteria for the selection of information technology used to disseminate public information
- enforcing the use of FIPS (Federal Information Processing Standards) and ANSI (American National Standards Institute) standards related to information processing

- establishing advisory boards to review various public information services and products of the Government
- strengthening the effectiveness of the various depository library programs

Developing policy strategies that rely primarily on neutral options will increase the likelihood that the strategy can be implemented successfully.

Clearly lacking from much of existing analyses of issues, options, and policy strategies regarding Government provision of public information is the perspective of the user of that information. The assumption that users are as sophisticated about accessing Government information sources as the collectors and providers of that information simply is not valid. Regardless of the policy strategy taken, greater emphasis on the user's perspective in terms of accessing public information is needed or public information will not effectively assist in individual or organizational decision making.

Increasing Access to Public Information

The Department of Agriculture and the Congressional Research Service's studies which have examined the information needs of agricultural America provide a useful approach for matching departmental information services and products to the needs of specific user segments (see Chapter 1). Similiar studies merit the attention and support of the Government, and with such studies there might be a better understanding of the public's needs and ability to gain access to Government distributed public information.

Generally, one finds only pockets of interest among the various Federal agencies regarding issues related to access to public information. This may not be as much an intentional slighting of information policy issues as it is the perception of the importance of information policy issues vis a vis other issues requiring the attention of the Government. A better understanding of the importance and impact of access to public information by Government officials is necessary and they may have to be "educated" in this regard.

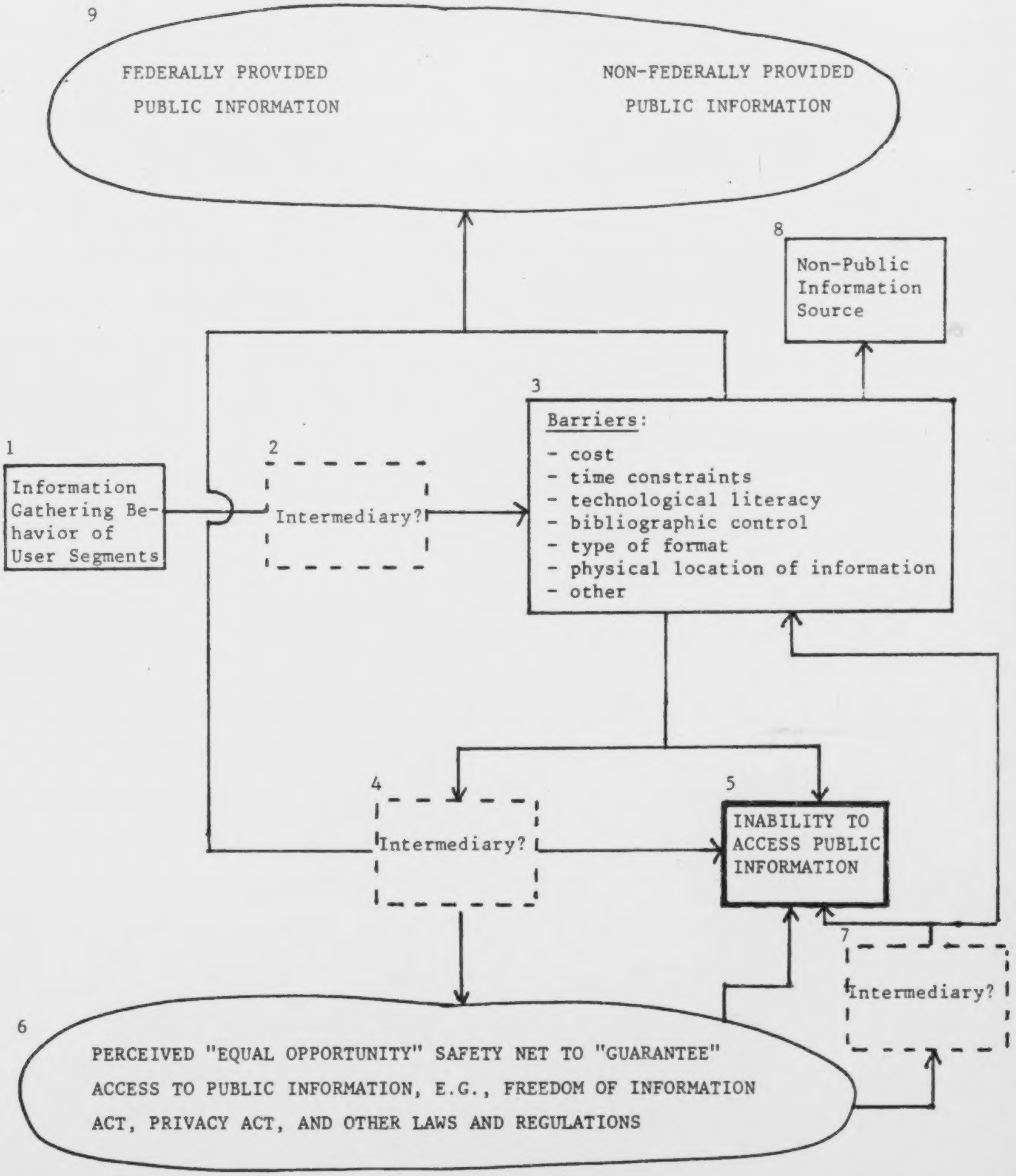
Overview of Access to Public Information

This report clearly indicates the complexity of the issues and problems related to the development of national information policies. However, through much of the literature, the perspective of the public information user is frequently forgotten or ignored. It is essential that future studies and research related to Government provision of public information include such a perspective.

Figure 4-4 is an overview, in general terms, of access to public information from the perspective of the user: (1) the user has an information need and initiates some information gathering behavior; (2) the user may or may not consult an intermediary for assistance; (3) the user encounters a

FIGURE 4-4

ACCESS TO PUBLIC INFORMATION


9
FEDERALLY PROVIDED PUBLIC INFORMATION
NON-FEDERALLY PROVIDED PUBLIC INFORMATION
8
Non-Public Information Source
3
Barriers:
- cost
- time constraints
- technological literacy
- bibliographic control
- type of format
- physical location of information
- other
1
Information Gathering Behavior of User Segments
2
Intermediary?
4
Intermediary?
5
INABILITY TO ACCESS PUBLIC INFORMATION
7
Intermediary?
6
PERCEIVED "EQUAL OPPORTUNITY" SAFETY NET TO "GUARANTEE" ACCESS TO PUBLIC INFORMATION, E.G., FREEDOM OF INFORMATION ACT, PRIVACY ACT, AND OTHER LAWS AND REGULATIONS

number of barriers to access the information, and depending on the user's skills and/or ability to consult with intermediaries, the user may (4) consult another intermediary, (5) be unable to access public information, (8) access some other type of information that meets his/her needs, or (9) access Government provided public information--through either a Federal or non-Federal agency/organization.

If users are unable to negotiate access barriers (3), they may decide to rely on "safety net" that guarantees "equal opportunity" to access public information (6). Depending on their knowledge of such "safety net" procedures, use of intermediaries that know such procedures (7), and the barriers related to using the safety net procedures (3), users may access the needed public information (9), access some other type of information that meets their needs (8), be denied access to public information (5), or perhaps, remain within a loop of barriers and intermediaries.

Although the model suggested in Figure 4-4 is only an overview, it does suggest a number of significant factors:

- the role of intermediaries is critical for effective provision of public information; the average citizen must rely on libraries, information services brokers, Federal agency user support services, etc., if access to public information is likely to be successful
- numerous types of barriers can limit the effectiveness with which the user can access public information; different types of barriers may affect different user groups differently in terms of their ability to access public information
- the degree to which the Government provides "safety nets" that insure or guarantee some minimal level of access to public information requires additional attention; FOIA, the Privacy Act, perhaps the GPO depository library program, fall into this category, but how effective

are each in guaranteeing "equal opportunity" to public information?

- users can encounter numerous pitfalls and difficulties in any attempt to access public information; in addition, users can be caught in a "closed loop" of activities that simply bounce them along a set of procedures without providing access to the needed public information

From the user perspective, "adequate" access to public information may, indeed, be difficult to provide without greater direct intervention by the Government to simplify and expedite the process.

If the Government is to take its responsibilities seriously as a provider of public information, an active stance is needed. Except for user services such as those provided by the Bureau of the Census, for example, the Government's role is primarily a passive one, i.e., the user should come to the Government and seek information rather than the Government initiating such direct assistance. Equal opportunity for all user segments to public information does not occur simply because the Government allows individuals to seek it.

The notion of a "safety net" that insures a minimum level of "equal opportunity" to public information raises a number of questions regarding the Government's responsibilities for provision of public information. As described, such "safety net" and "equal opportunity" perspectives promote a passive rather than active role of the Government regarding its responsibility in the provision of public information.

In the discussions with various Federal officials that were conducted as part of this report, the authors encountered a perception that an adequate "safety net" exists, that all "print" public information is placed into the GPO depository library program (thus, insuring adequate access by the public), that it is the public information user's responsibility to come forth and request public information, and that all user segments have equal access to public information. Such views are naive and simplistic at best.

In summary, information gaps exist in American society and specific user segments experience difficulties in obtaiing needed public information. There is a confusing, contradictory, and incoherent body of Federal legislation and regulations related to Government provision of public information. Further, the development of information systems at the Federal level is cost-driven and little consideration is given to public access to that information. Although the nation's libraries are given lip-service as an important player in insuring adequate access to public information they are not funded to accomplish such an objective. And finally, political philosophy combined for a zeal for economy in Government, rather than empirical evidence tends to dictate the development of information policies and procedures.

A Research Agenda for Information Policy

The analysis of policy issues identified a number of key research areas related to Government provision of public information. A summary of these research topics with specific research objectives is given in Appendix 4-10. A research agenda is essential as a basis for the objective development of national information policies. This agenda should be broadly conceived, incorporating research and development studies so that conceptual models as well as policy guidelines can be developed and tested. The agenda should be shaped by people in all segments of society and the information sector and identify long-term goals and specific objectives related to the resolution of national information policies.

The Government, as non-Federal stakeholders in the information sector have charged, does not coordinate planning regarding information polcies. The

Government tends to jump into decisions which may contradict existing or future decisions. For example, the for-profit sector was assured that the GPO would not extend its micropublishing program to Congressional hearings without taking into account the needs and interests of all stakeholders in the information sector. However, in the late 1970s the GPO included microfiche hearings in its depository program after it queried depository libraries if they wanted to receive that type of public information in that format. The views of other stakeholder were not solicited.

The time is ripe for an open and extensive discussion of the role, use, and access to Government provided public information and the effects of technology on access to that information. The development of a national agenda regarding these topics could be modeled after the successful White House Conference on Library and Information Services which was preceded by state and local meetings.

Direct participation and planning for the conference and its agenda from both state and Federal library and information-related professional associations, publishers, data base brokers, lay-people, scholars, Government officials, and other stakeholders from the information sector could provide the basis for establishing such an agenda. At present, there is no agreement on which issues are _most important_ or require immediate attention; there are few mechanisms for encouraging open communication and discussion among the various stakeholders in the information sector; and the complexity of the issues will increase rather than decrease without some agreement both within and without the Federal government regarding national information policies.

The agenda could be translated into specific research and development studies and serve, then, as a basis for a series of workshops and seminars to disseminate findings and recommendations widely and to open them to public review. Research in these areas must have _policy value_. And despite the costs for the development and implementation of a national agenda for information policies, the costs for n̲o̲t̲ taking this or some other type of action are likely to be far greater.

With a research basis of information related to the issues, careful planning, a structured approach to identifying and discussing the various policy issues, and the establishment of a cooperative partnership among the stakeholders in the information sector, the existing quagmire of overlapping, contradictory, and differently interpreted Federal information policies can be made coherent. Indeed, such clarification and coherency is essential for the continued strength and productivity of both the Government and the citizenry of the United States.

APPENDICES

APPENDIX 1-1

TYPES OF PUBLIC INFORMATION RESOURCES

Administrative Reports

Many Government agencies issue an annual or other periodic report identifying their accomplishments during the past year and their proposed budget and activities for the upcoming year. These reports frequently contain organization charts and list the services provided.

Committee and Commission Reports

Both Congress and the President establish special committees and commissions to examine a social, political, or economic concern, a condition, or a foreign policy issue. These committees and commissions issue reports, many of which are available for public scrutiny.

Research Reports and Development Studies

The Federal government is a significant funder and conductor of research on a wide range of topics. The importance of this type of public information is evident from the existence of the National Technical Information Service (NTIS), Department of Commerce, which serves as a clearinghouse for scientific and technical report literature. In addition, many Federal agencies maintain data bases and reference aids which monitor those research projects in progress of completion.

Statistics

The Federal government collects, tabulates, and publishes statistical data; in fact, it is the largest publisher of such data in the world. Active in this area are agencies such as the Bureau of the Census, the Bureau of Labor Statistics, the National Center for Education Statistics, the National Center for Health Statistics, the Economics and Statistics Service, and the Statistical Reporting Service (Department of Agriculture). The Bureau of the Census collects information on demographics and economic factors (retail and wholesale trade, service industries, manufacturing, construction industries, and transportation), and censuses of agriculture and government. The Bureau of Labor Statistics collects data on labor economics (e.g., employment, unemployment, productivity measures, prices, wages, industrial relations, and occupational and health statistics).

General Information Pamphlets and Fact Sheets

Many people often associate public information with this type of source. These publications offer suggestions, ideas, and techniques for people to lead a better, or at least more efficient, life. The all-time best sellers of the Government Printing Office (GPO) are _Infant Care_ and _Prenatal Care_, while the the _U.S. Government Manual_ is the best selling non-pamphlet (Hernon, 1980).

Periodicals

The Federal government is a major producer of periodicals. Varying in content, appearance, value, and purpose, they range from those aimed at a narrow audience to titles having a broad appeal. A wide gamut of periodical types is published; these include research journals, newsletters from individual agencies, popular periodicals on specific topics, scenic or travel periodicals, etc.

Press Releases and Other Ephemera

These publications provide current information and identifies agency activities, source material, publicly held meetings, proposed rules and regulations, and speeches delivered by important officials within the agency. Some agencies issue press releases in the form of a newsletter.

Directories

These publications list Government agencies and their key officials, agency resources and services, etc. Examples of directories include the Congressional Directory, agency telephone directories, and the U.S. Government Manual. Such publications are essential for the provision of fast, accurate, and current answers to "quick fact" reference questions and for referrals.

Handbooks, Manuals, and Digests

This type of public information provides synopses and analyses of significant developments and issues; they may describe something and offer instructions for its repair. Some handbooks represent a compilation of factual information. The Department of Defense, for example, issues technical manuals identifying component parts of equipment and procedures for the replacement of these parts. The Department also makes available the Area Handbook series written through the Foreign Area Studies program of The American University.

Bibliographies, Lists, Guides, and Catalogs

Both executive agencies and congressional committees issue lists of their publications. Sometimes, these lists are incorporated into press releases and newsletters. The GPO is a major producer of this publication type; it issues, for example, the *Monthly Catalog of United States Government Publications*, the *Publications Reference File*, subject bibliographies, and catalogs of sales publications. NTIS offers *Government Reports Announcements and Index* and abstract newsletters, which highlight new publications by subject. Numerous other examples of this type of public information can be found in Morehead (1983) and (Zink, 1982).

Decisions and Opinions

Official decisions and opinions are rendered by the courts, regulatory agencies (e.g., the Interstate Commerce Commission and the Nuclear Regulatory Agency), the military, the Comptroller General (General Accounting Office), and the Attorney-General. Decisions and opinions provide the legal precedence for interpreting public laws and regulations, and provide a forum in which these laws and regulations to be challenged.

Rules, Regulations, Directives, and Circulars

Commonly referred to as administrative law, this type of information represents the efforts of an agency within the Executive or Legislative Branch of Government to establish the procedures by which statutory law is administered. For example, the President and Congress enacted the Food Stamp Program and placed it under the jurisdiction of the Department of Agriculture. The Department then developed the administrative rulings to implement the statutory law and to guide daily operations and decision making.

Article I, Section 5, of the Constitution authorizes each House of Congress to determine the rules which will govern its proceedings. Standing rules continue from one Congress to another but are subject to change. Precedents encompass a broader concept; the precedents of the Senate comprise procedural law under which that House conducts its business. This type of law consists of standing rules, *ad hoc* orders, unanimous consent agreements of the Senate, and relevant statutory and constitutional provisions.

The Executive Branch issues circulars which prescribe policies, procedures, and practices. In addition, agencies formulate and announce policies and procedures by telephone and letter. Later these decisions may be cumulated and issued as a regulation. For example, in 1983 and 1984, the Joint Committee on Printing developed regulations and guidelines, partly based on existing policy, to update the 1977 *Printing and Binding Regulations* (see Chapter 3).

Maps, Charts, and Photographs

The major mapping agencies in the Federal government "annually produce over 53,000 new maps and charts and distribute over 160,000,000 copies" (North, 1983, p. 345). Examples of these mapping agencies are:

- Social Conservation Service and Forest Service

(Department of Agriculture)

- National Ocean Service and Bureau of the Census (Department of Commerce)
- Defense Mapping Agency and Corps of Engineers (Department of Defense)
- Federal Insurance Administration (Department of Housing and Urban Development)
- Geological Survey, Bureau of Land Management, and National Park Service (Department of Interior)
- Federal Highway Administration (Department of Transportation)
- Tennessee Valley Authority

Federal maps and charts include weather maps, soil maps, nautical charts, aerial photographic maps, geological maps, maps of countries and their major cities, topographic maps, etc. Special maps also display serial and space imagery and map data in digital form. The National Aeronautics and Space Administration is an important producer of photographs taken from its various probes of outer space.

Audiovisual Resources

The Federal government spends approximately $100 million per year on "the production, duplication, distribution, and off-the-shelf purchases of motion pictures, videotapes, slides and audio recordings" (President's Private Sector Survey on Cost Control, 1983, p. 67). Due to the April 1981 directive of President Reagan and the subsequent directives from the Office of Management and Budget, "government spending on audiovisual activity decreased 13 percent from FY1981 to FY1982, the greatest decrease in five years. Furthermore, in-house production of motion pictures reached an all-time low in FY1982" (Ibid., p.

69).

The National Audiovisual Center, General Services Administration, was created in 1969 to serve as a clearinghouse for Federal government audiovisual material and to make these resources available for public use (see Chapter 3). Holdings are far from comprehensive but include slides, audio tapes, 16mm and 35mm educational movies, etc.

Bills and Resolutions

Bills and resolutions are the form in which legislation is proposed in Congress. As such, they are primary source material, critical for original research and investigation.

Hearings

Hearings, which may be publicly held or in closed session, enable Members of Congress to determine whether a particular action is necessary, to see whether legislation is or is not warranted, or to draw public attention to an issue. They afford an opportunity to draw together information from informed sources, to display a variety of viewpoints, to educate the public about an issue, or to call attention to the consequences of an action. Congressional hearings are either for an _oversight_ (review existing laws on the basis of policy priorities, program effectiveness, or administrative discretion) or a _legislative_ (focus on bills before Congress or a subject on which legislation is contemplated) purpose (Zwirn, 1983).

Executive agencies can also hold hearings. For example, the Bureau of Indian Affairs communicates with people from the various Indian reservations. However, these hearings are infrequently published and may remain in transcript form in the offices of the agency or the National Archives, where they may be available for public inspection (Tate, 1983). The point is that a number of Executive agencies hold hearings on topics of broad interest, may treat them as public information, but not have a dissemination mechanism for this information.

Journals and Proceedings

These serve as the records of each session of Congress. The journals are the minutes or summary of the actions and activities of both houses (e.g., the *House Journal* and *Senate Journal*), while the proceedings (e.g., the *Congressional Record*) contain the debates and speeches delivered on the floor as well as assorted other material. The House but not the Senate is videorecording its floor discussions, and frequently these can be seen on public television.

The public can view House proceedings on the Cable Satellite Public Network (C-SPAN). Garay (1984) provides an excellent analysis of the relationship between braodcasting and the Government. As he points out, the printed *Congressional Record* is subject to Congressional revision, while videorecordings are retained for only two months before being erased and used again. On the other hand, audiorecordings "would be retained indefinitely in the Library of Congress" (p. 117) and therefore become the archival copy.

Another type of proceedings, found in both the Executive and Legislative branches of Government, is that which reports on a special conference, seminar, or workshop. The purpose of these proceedings is to inform members of the Government or special target groups, or to report on the exchange of ideas.

Laws and Statutes

This type of public information source represents the official text of legislation which has become public law. Statutory law can be found in both the Statutes at Large and the United States Code.

Treaty Sources

Treaties represent the result of foreign policy negotiation between the Executive Branch of the Federal government and another country. Congress enters into the process to convey its concerns and points of view to the administration and when the Senate must consider ratification of a treaty by a two-thirds vote.

Technical Reports

Technical reports frequently result from Government sponsored research and development activities but are not confined to these. They are usually directed toward the specifications of a contract but also may be written to meet the information needs of a broader audience. As shown by Purcell, "the term 'technical report literature' has a broad scope and describes various types of publications" (1984, p. 173). The final report on a technical contract is probably the most valuable of the types.

The responsibility for the announcement and distribution of technical report literature is fragmented among various clearinghouses, institutes, and the originating or publishing agency. Examples of Federal agencies which have the announcement and distribution of technical reports as a primary function are the National Technical Information Service, Educational Resources Information Center (ERIC), National Aeronautics and Space Administration, Department of Energy, and the Defense Technical Information Center.

Patents

A patent for an invention is a grant by the Federal government to an inventor. Awarded by the Patent and Trademark Office, the patent right extends to the entire United States and its territories and possessions, for a period of seventeen years. Patents cover "new and useful processes, machines, manufacturers, or compositions of matter, new and distinct varieties of plants or organisms or new designs for articles of manufacture." They may be grouped into four categories: "utility patents, the largest category; plant patents; design patents; and reissue patents, which show corrections for patents previously issued" (Aluri and Robinson, 1983, p. 89).

Technical Documentation

The proliferation of machine-readable data files and the creation of computer software to facilitate their use has lead to a special type of public information -- technical documentation. The availability of numerous software programs emphasizes the need for codebooks and other documentation explaining the layout, the specifications, reliability of data, etc.

APPENDIX 1-2

TYPOLOGY OF INFORMATION GATHERING SITUATIONS*

Neighborhood

- -Neighbors -- nosiy, trashy, drunk, gossipy, etc. (If drugs and theft, code under Crime)
- -Neighborhood Kids -- hoodlums, noisy, trashy, vandalism, etc. (If drugs and theft, code under Crime)
- -Dogs in Neighborhood -- loose, barking, messy, into trash, dog control laws not implemented, etc.
- -Rats in Neighborhood -- in house, in neighborhood, not controlled by city, etc.
- -City Services in Neighborhood -- trash removal, street maintenance, sewage, abandoned appliances, etc. (Code dog control and rat removal above)
- -Traffic and Parking in Neighborhood -- noise, speeding cars and motocycles, not enough parking space, dangerous traffic, too little traffic control, etc.
- -Vacant Lots, Abandoned Cars, Abandoned Buildings in Neighorhood, etc.
- -Noisy Airplanes over Neighborhood, etc.
- -Neighborhood Contact -- getting along with neighbors, making contact with, etc.
- -Other Neighborhood -- beggars, changing character, other animals, etc.

Consumer

- -Product Quality -- fell apart, badly made, problems getting exchange, refund, or repairs
- -Product Availability -- getting particular sizes, brands, etc.
- -Product Information -- which products to buy, where to buy, product price, etc.
- -Billing -- billed for items/services not received, charged to wrong account, etc.
- -Service Availability -- inconvenient service, locations, hours, can't find, service unavailable, etc.
- -Service Quality -- poor quality of service, etc.
- -Service Information -- which service to get, where to get, service price, etc.
- -Prices High -- cost living too high, prices go up, prices too high, etc.

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* Source: Ching-chih Chen and Peter Hernon, Information Seeking: Assessing and Anticipating User Needs (New York: Neal-Schuman, 1982, pp. 175-183.

-Consumer Protection -- protection against rip-offs, dishonest merchants, free offers, mail order companies, obnoxious salesman, harassment from creidtors, etc.
-Other Consumer

Housing and Household Maintenance

-Loans and Mortgages -- concerns on getting loans and mortgages, financing home improvements, etc.
-Getting Another/Better Place to Live -- dissatisfaction with present housing (rent, landlord, location, etc,) and want better place.
-Landlords -- dissatisfaction with rent, maintenance, etc. but not mention wanting to find new place.
Public Housing -- getting, changing, repairing (look for mention public housing).
-Barriers to Getting New Housing -- high cost, age, children, pets.
-Housing Insurance -- need information, etc.
-Selling House, Sub-Leasing -- finding buyer, renter, getting dollar return, etc.
-Getting Emergency Housing -- have no place to stay, etc.
-Regulations -- rules on home improvements, house inspection, zoning, installation of house trailers, etc.
-Utilities Service -- complaints or need for information on phone, gas, electric, water, etc.
-Property or House Repairs and Improvement, Maintenance Operation -- need to do, get done, know how to do, etc.
-Housekeeping/Do-It-Yourself Projects -- housebreaking pets, gardening, getting rid insects, household hints, learning to sew, etc.
-Car repair, Operartion, and Maintenance -- maintaining and caring for personal, family car(s), etc.
-Other Housing

Employment -- Getting/Changing Jobs

-Barriers to Getting/Keeping/Changing Jobs -- age, education, veteran, draft status, health, etc.
-Changing Jobs, Getting Different Job -- looking for new job, different job, etc.
-Unemployment -- not working now, need job, unemployed, need to know where and how to find work, how to make resume, etc.
-Summer Jobs -- getting, etc.
-Career Decisions
-Job Advancement
-Other

Employment -- Salary and Benefits

-Pay
-Promotions
-Job Training
-Unions
-Other

Employment -- Organizational Relations

- -Job Definition
- -Relations with Supervisors
- -Relations with Co-Workers
- -Other

Employment -- Technical

- -Issues Related to Execution of Specific Job
- -Setting up Business

Employment -- Other

- -Mechanical Problems

Education and Schooling

- -Adult Education -- poor quality, unavailability, need for, etc.
- -Financial Aid for Education -- how to get it, need for, etc.
- -High Cost of Education -- complaints about, etc.
- -Educational Information -- programs should take, credits, opportunities, best schools, how to get education, etc.
- -Education System -- poor quality, fear for children, dissatisfaction, schools going downhill, lack of programs, lack of resources, lack of backing (levy failure), etc.
- -Parent/Student/Teacher Conflicts -- grade failures, report cards, discipline problems, etc.
- -Busing -- complaints about school busing, etc.
- -Part-Time Jobs to Support Education -- getting jobs specifically to support education, etc.
- -Education Certification -- need to get certification, getting certification cleared, etc.
- -Other Education and Schooling

Health

- -Mental Health -- problems with, alcholism, depressions, drug addiction, etc.
- -Physical Health -- problems with, etc.
- -Health Insurance -- complaints and questions about, coverage, high cost, etc.
- -Cost of Health Care -- too high, doctor's fee, prescription drugs, hospital bills, not enough money to pay for care, etc.
- -Availablity and Adequacy of Health Carte -- too few doctors, clinics, care inadequate, etc.
- -Health Information -- need information or advice on a specific health problem or disease, etc.
- -Getting Medical Care -- need information on getting medical, dental, other health care, etc.
- -Other Health

Transportation

- Inadequate Bus Service -- slow not enough routes, not frequent enough, available at wrong times, not enough taxi service, barriers to using bus (health, age), etc.
- Crime on Public Transportation -- fear of using, muggings, etc.
- Getting from One Place to Another -- need rides to keep appointments, get services, etc.
- Auto Insurnace -- need information or have complaints about coverage, claim settlements (if legal dispute over claims, code under Legal)
- Financing a Car -- need loan or money to buy or repair a car, replace car parts, etc.
- High Cost of Public Transportation -- buses, cabs, etc.
- Road Maintenance or Markings -- not clear, not enough, etc. (if in neighborhood, code under Neighborhood).
- Inadequate Emergency Services -- call boxies, highway patrol, etc.
- Information on Public Transportation -- need information on bus schedules, routes, etc.
- Other Transportation

Recreation and Culture

- Too Few Recreation Opportunities for Children/Teens -- not enough playgrounds, not enough for kids to do, etc.
- Too Few Recreation Opportunities for Adults and families -- not enough available, etc.
- Poor Quality of Recreation Areas, Destruction of, etc.
- High Cost of Recreation/Entertainment -- restaurants, nightclubs, movies, etc.
- Need for Information on Recreation, etc.
- Lack of Supervision at Playgrounds -- bullying, fear for children, etc.
- Other Recreation and Culture

Money

- Too High Taxes -- property taxes and taxes in general, etc.
- Getting Loans or Credit, Interest Rates -- need to get, etc. (Include nonspecific loans only; i.e., loans for housing should be coded under Housing)
- Filling in Personal Income Taxes -- need help, information, etc.
- Retirement -- worried about, need information on, etc. (Code social security under Public Assistance).
- Stock Market, Investment, Securities -- need information, advice, etc.
- Not Enough Money to Make Ends Meet -- general lament, etc.
- Acquiring or Selling Properties pp need, problems with, etc. (Except home to be coded under Housing)
- Handling Money -- need information, help, handling money, consumer creidt, etc.
- Life Insurance -- problems with, need information on, etc.
- Other Financial Matters and Assistance

Public Assistance and Social Security

- -Unemployment Compensation, Insurance -- need, need information on, complaints on, filing for, etc.
- -Social Security -- need, need information on, complaints, etc.
- -Food Stamps -- how to get, don't get enough, problems with, etc.
- -Medical Assistance, Medicare, Medicaid -- problems with, need for information on, etc.
- -Welfare -- not enough welfare, social worker conflect, receiving check, questions on, etc.
- -Public Disability Insurance -- filing, getting, etc.
- -Emergency Financial Help for Housing -- to pay rent, mortgage, etc.
- -Emergency Financial Help for Food -- to get groceries, food stamps, etc.
- -Other Need for Emergency Financial Help -- clothing, money in general, etc.
- -Other Public Assistance and Social Security

Child Care

- -Day Care/Pre-School Programs/Babysitting -- need, how to get, etc.
- -High Cost of Day Care, etc.
- -Child Care, Well-Being, and Behavior -- concerns about, difficulties, need for information ,etc.
- -Care, Well-Being, and Behavior of Other Family Members -- concerns about difficulties, need for information, etc.
- -Care, Well-Being, and Behavior of Self -- concerns about, difficulties, need for information, etc.
- -Need for Information to Help Children with Homework, etc.
- -Other Child Care

Other Family Relationships

- -Separations, Divorces -- need for, want to, information on, etc.
- -Desertion -- difficulty with, etc.
- -Situations with Parents, Other Relatives
- -Family Planning
- -Other Family Relationships

Personal Relations

- -Need for Someone to Talk to about Personal Problems, etc.
- -Friendships
- -Other Personal Concerns

Legal

- -Divorce, Separation, Desertion Laws -- legal aspects, etc.
- -Legal Contracts -- damage suits, lease disputes, disputed insurance claims, etc.
- -Legal Documents -- need to get, need to understand wills, passports, birth certificates, etc.
- -Information on Specific Laws -- how to make appeals, do-it-yourself law, etc.
- -Getting a Lawyer -- need one, how to get, etc.
- -Getting Cheap or Free Legal Advice, etc.
- -Criminal Records -- difficulties with, clearing name, parole, probation requirements, etc.
- -Legal Service -- need for other legal service not coded above
- -Other Legal

Crime and Safety

- -Lax Law Enforcement -- not enough police, police don't do anything, criminals get off, laws lax, etc.
- -Street Lights -- need more, etc.
- -Crime against Non-Family -- crime too high, general statement of fear about crime, crime not self-associated, etc.
- -Crime against Self, Family -- specific instances (self-associated situation) and resulting fear, etc.
- -Drugs -- talk of drugs, narcotics traffic, use, and resulting crime, etc.
- -Other Crime and Safety

Energy

- -Gasoline Shortages
- -Energy Conservation
- -Cost of Energy
- -Other Energy

Current Affairs

- -News, Current Affairs
- -Political Issues and Politicans
- -General Governmental Administration and Policies
- -Other Current Affairs

Miscellaneous

- -Sports, Weather -- talk of, need information on, etc.
- -Locating Names and Addresses of People, Agencies, Places -- to find, getting maps and directions, getting information on institutions, etc.
- -General Factual Information -- word definitions, spellings, historical facts, nature, geography, famous people, etc.
- -General Citizenship Information -- how to register to vote, get drivers license, register a car, etc. (Code immigration-related in Immigration, Migration, Mobility).

- -Foreign or International Trade -- international monetary exchange rates, rules and regulations for cross-nation travel (Code passports under Legal; code visa and immigration under Immigration, Migration, Mobility).
- -Religious Issues and Theology -- questions about life after death, the meaning of life, etc.
- -Mass Media -- concerns about, violence in, bias in, effects of, inadequacies of, etc.
- -Veterans and Military Disscrimination, Migration and Mobility
- -Other Miscellaneous

APPENDIX 2-1

REVIEW OF SIGNIFICANT STUDIES

Studies included in this review were examined in terms of the following criteria:

- discussion of both "effects of information technology" and "Government provision of public information"
- comparisons between the public and private sectors in applications of information technology vis a vis public access
- discussions of the "effects of information technology" in general, which have _specific_ applications or could be extrapolated to have applications regarding "Government provision of public information"
- development of specific themes and/or the offering recommendations for the issues raised

Each study will be listed by author(s) and brief information will be provided concerning (1) the name of the study, (2) the method on which the study is based (3) intended audience, (4) themes, and (5) recommendations. The themes and recommendations included in this review are those which the authors of this contracted study perceive as most significant or important. Only those portions of the publications that relate _directly_ to the topic at hand are noted. Figure 2A-1 is a summary of the studies reviewed in this section.

FIGURE 2A-1

SUMMARY OF STUDIES REVIEWED IN APPENDIX 2-1

AUTHOR(S)	DATE	TITLE
Bikson, Quint, and Johnson	1984	Scientific and Technical Information Transfer: Issues and Options
Braunstein	1981	The Functional of Information Markets
Culnan	1984	The Impact of Technology on Public Access to Public Information
Ganz, ed.	1980	Report of the Working Group on Private Sector/Government Relatioships for Scientific and Technical Information
Glaser	1972	Information Technology: Power Without Design, Thrust Without Direction
Heim	1983	Government-Produced Machine-Readable Statistical Data as a Component of the Social Science Information System: An Examination of Federal Policy and Strategies for Access
Hernon	1982	Use of Microformatted Government Publications
Hernon and McClure	1984	Public Access to Government Information
Levin	1983	Access and Dissemination Issues Concerning Federal Government Information
Levitan	1981	The Collapse of Traditional Distinctions, and The New Information Hybrid
Lowi	1972	Government and Politics: Blurring of Sector Lines, Rise of New Elites
McClure	1981	Online Government Documents Data Base Searching and the Use of Microfiche Documents Online by Academic and Public Depository Librarians
McClure	1982	Technology in Government Document Collections
Myers	1985	The Government Printing Office Cataloging Records: Opportunities and Problems
Peyton	1981	The Creation of Information: Property Rights and Subsidies
Porat	1977	The Information Economy
Robertson	1981	Access to Information
Salaman and Hettinger	1984	Policy Implications of Information Technology
Salvaggio	1983	Social Problems of Information Societies
Schwarzkoof	1981	Depository Libraries and Public Access
Schweizer	1983	Online Retrieval of Government Documents Using Teletext and Videotext Services

FIGURE 2A-1

(CONTINUED)

Sprehe	1981	A Federal Policy for Improving Data Access and User Services
U.S. Congress, Joint Committee on Printing	1984	Provision of Federal Government Publications in Electronic Format to Depository Libraries
U.S. Congress, Office of Technology Assessment	1981	Computer-Based National Information Systems
U.S. Congress, Office of Technology Assessment	1982	MEDLARS and Health Information Policy
U.S. Department of Agriculture	1984	Joint Congressional Hearing on the Changing Information Needs of Rural America: The Role of Libraries and Information Technology
U.S. Department of Commerce	1983	Future Information Processing Technology - 1983
U.S. General Accounting Office	1984	Depository Librarians' Views on GPO's Administration of the Depository Library Program
U.S. National Commission on Libraries and Inf. Sci.	1976	National Information Policy
U.S. National Commission on Libraries and Inf. Sci.	1982	Public Sector/Private Sector Interaction in Providing Information Services
U.S. National Commission on Libraries and Inf. Sci.	1980	The White House Conference on Library and Information Services - 1979: The Final Report

Bikson, Quint, and Johnson, (1984)

STUDY NAME: Scientific and Technical Information Transfer: Issues and Options

METHOD: Review Essay

AUDIENCE: National Science Foundation

THEMES:

- The very low level of [Federal] support for knowledge transfer in comparison to knowledge production suggests that dissemination efforts are not viewed as an important component of the R&D process.

- There are mounting reports from users about difficulties in getting appropriate information in forms useful for problem solving and decision making.

- While some problems remain in assuring the availability of [Federally produced, public] information, Federal efforts in this regard have been largely successful; however, two problems remain:

  a. mechanisms are inadequate to help the user assess the quality of available information

  b. the characteristics of actual usage behavior are not sufficiently taken into account so that retrieval of relevant information in forms useful for application is impaired

RECOMMENDATIONS:

- Three options for improving information transfer emphasizing increased selectivity and user-responsiveness of existing formal dissemination systems and on coupling them more closely to informal systems:

  a. Technology Intensive Options

    - experimental programs using electronic interactive networks

    - experimental programs to support the design and development of more flexible and powerful user-guided methods for retrieving and examining highly structured textual and numerical data bases

  b. Supply Side Options

    - improvements in the organization of information

    - improvements in the quality of data through standards

    - greater use of information intermediaries

  c. User Focused Options

- building user skills to seek out and find relevant information
- programs to encourage the direct participation of users in the information transfer process
- collaborative research programs involving government, industry, and universities

- Four areas for additional research are detailed: (a) systematic evaluation based on technological, economic, and institutional considerations and an analysis of the roles to be played by the public and private sectors, (b) assessment of how new interactive information technologies can meet the needs of users of public information, (c) evaluation of the regulatory and legal environment, and (d) assessment of the effects of international information flow.

Braunstein (1981), in U.S. Dept. of Commerce, NTIA

STUDY NAME: The Functioning of Information Markets

METHOD: Opinion-essay

AUDIENCE: "Public policy makers"

THEMES:

- Technological change can have any one of the following effects on production and dissemination of public information:

  a. reinforce the market position of the dominant firms

  b. lower entry barriers for improved public access

  c. increase potential competition among information providers

  d. redefine market boundaries and competition among firms thought to be in traditionally disparate industries

  e. produce new "information-related" products that do not clearly fall into any one existing market

- Vertical integration and control of information services/products is often used to replace contractual or open-market supplier-customer relationships in the information industries because it:

  a. internalizes costs, i.e., less expensive than trading in the market

  b. reduces risk by not relying on the market

  c. provides opportunities to engage in price discriminations

  d. allows substitution of internalized resources for others having to be purchased on the open market

RECOMMENDATIONS:

- Remedies and new approaches to information dissemination problems must be conducted with full cognizance of the complexity of creating economic policy concerning the distribution of information.

Culnan (1984)

STUDY NAME: The Impact of Technology on Public Access to Public Information

METHOD: Opinion Essay

INTENDED AUDIENCE: Congress, Office of Technology Assessment Staff

THEMES:

- If paper-based information is substantially phased out, the likely result will be a failure of the Government to fulfill the spirit if not the letter of the law in the near term.
- Not all libraries, individuals, or organizations have the (a) necessary equipment, (b) the technological knowledge and skills, and (c) the awareness of what Government information is publicly available. Some segments of the public are not likely to, in the short term, have the resources to purchase or use information handling technologies to access public information from the Government if available only in electronic format.

RECOMMENDATIONS:

- Conduct national research related to the need for public information, the public's preferences for acquiring such information, and the library community's readiness to use electronic based information.
- Develop a national information policy that "strikes an equitable balance between public and private sector interests."
- Develop product categories of public information and identify potential markets for each of these products rather than viewing public information as an amorphous whole and the public as a single homogeneous market.

Ganz, ed., (1980)

STUDY NAME:	Report of the Working Group on Private Sector/Government Relationships for Scientific and Technical Information
METHOD:	Survey Questionnaire and Literature Review
AUDIENCE:	Government Officials and Leaders in the Private Sector

THEMES:

- There is no control over the arbitrary power of agencies regarding the production and dissemination of STI.
- There is great diversity among the Federal agencies investigated regarding their STI information services and there is little indication of systematic differences among the various approaches.
- The most important issue identified is the different philosophical perspective that the private sector views information as a commodity to be bought while government information managers recognize its social value and impact.
- Neither the Federal government nor private industry respond as single entities in the provision of STI.
- There appears to be no compelling economic or technical justification for Government producing and providing STI services to users. There is justification for Government subsidy of these activities and control over the STI services.

RECOMMENDATIONS:

- Changes in the present system of STI information services should be assessed in terms of:
  - a. the nature of the Government agencies supplying information and the characteristics of the private sector firms
  - b. the effects of technological advances in information processing
  - c. the dependency relations between Federal suppliers and other elements of the U.S. and international information enterprise
  - d. the meaning of efficiency in information dissemination, and how efficiency can be measured
- Congress must resolve the fundamental question: Who is to produce the various STI services? Issues related to pricing and subsidies are independent from this central question.

Glaser (1972), in Information Technologies

STUDY NAME: Information Technology: Power Without Design, Thrust Without Direction

METHOD: Opinion Essay

AUDIENCE: Corporate Executives

THEMES:

- There are no present means for developing policies relating to information technology as a whole. Today [1972], development, application, and regulation are segmented and disparate.

- Failure to establish sound policies related to information technology can lead to reduced benefits from these technologies and increased likelihood of authoritarian structures posing threats to society.

RECOMMENDATIONS:

- Centers should be established to study and perform research on information systems and technology, and, in particular, to consider implications of alternative courses of actions and policies.

Heim (1983)

STUDY NAME: Government-Produced Machine-Readable Statistical Data as a Component of the Social Science Information System: An Examination of Federal Policy and Strategies for Access

METHOD: Analytical Review

AUDIENCE: Librarians

THEMES:

- There is a growing number of Federally-produced, machine-readable statistical data in the area of the social sciences.

- Libraries have not integrated machine-readable statistical data files into their library holdings, they lack adequate facilities to load and program the tapes to access them, and librarians generally lack adequate training to make such files available to the public.

- Currently, there is inadequate Federal policy on the topic of machine-readable statistical data files; sources describing such files are out-of-date, been eliminated [e.g.,Statistical Reporter], or non-existent; and public access to these data files is minimal.

- Access to such files cannot occur until there is provision of software and other aids, uniform pricing for the files is established, and off-loading of data can be accomplished effectively and inexpensively.

RECOMMENDATIONS:

- More research is needed to detail who the users of machine-readable statistical files are; what type of packaging they prefer for their data; what sort of support services they require to make optimal use of their data; and how their needs for these primary data can be met by established systems of information delivery.
- Librarians must take a more assertive stance on assuming responsibility for the purchase, organization, and provision of accessibility for machine- readable statistical files.
- The Federal government must provide a comprehensive listing of and maintain bibliographic control over machine-readable statistical files.

Hernon (1982)

STUDY NAME: Use of Microformatted Government Publications

METHOD Survey Research

AUDIENCE: Librarians and Information Professionals

THEMES:

- Some 70% of the political scientists and economists surveyed indicated that their use of government information in a microformat would decrease because (a) it is difficult to browse and scan, (b) there is limited availability to readers and printers, (c) statistical data and figures are poorly reproduced in official reports, and other factors.
- Providing government information, but in a microformat, is not, in itself, increasing public access to that information.

RECOMMENDATIONS:

- Expanded collections of microformatted government publications must be made more accessible by (a) increased availability of viewers and printers, (b) development of current awareness services, (c) improved document delivery services, and (d) training librarians to devise means to better match information gathering behaviors with information sources. Librarians must be able to provide guidance on how to effectively locate and obtain microformatted government information.

- Federal agencies must increase public access to information provided in a microformat through (a) increased marketing and awareness campaigns of what information is accessible and (b), increasing the "ease" of access to microformatted information, i.e., making information available in a microformat is not the same as providing public access to that information.

Hernon and McClure (1984)

STUDY NAME: Public Access to Government Information

METHOD: Literature Review and Conceptual Essay

AUDIENCE: Librarians and Government Officials

THEMES:

- The GPO depository library program provides minimal access to only selected publications from the U.S. government.

- The depository library program is plagued by unclear goals and objectives, underfunding, an inadequate organizational structure, and ineffective options to enforce provisions of Title 44, _U.S. Code_, to improve the operations of the program.

- The 1,391 depository libraries have neither the facilities nor the staff to take advantage of new information handling technologies as a means to improve access to public information provided by the Federal government.

- The lack of clear national information policies has hindered the improvement of the depository library program and has left depository librarians to deal with the Government Printing Office as a agent of Federal policy when, in fact, there are numerous agencies developing information policy and regulations--either formally or _de facto_.

RECOMMENDATIONS:

- There must be significant changes in the structure of the program, establishment of clear goals and measureable objectives, and the provision of adequate _direct_ resources (including information handling technologies) to the depository libraries is necessary before they can be effective providers of public information.

- Careful selection of _which_ information is to be termed "public information" for entry into the depository library program is necessary instead of the apparent trend to add information that may, in fact, not serve a wide range of users. Such is especially necessary since many of the items eligible for depository distribution go unselected by member libraries.

Levin (1983)

STUDY NAME: Access and Dissemination Issues Concerning Federal Government Information

METHOD: Opinion Essay

AUDIENCE: Librarians and Information Professionals

THEMES:

- A national information policy is being developed "through the back door" by the private sector and this runs counter to the tradition of open availability of Federal information.
- There is a growing emphasis within the Federal government to produce machine-readable data files (MRDFs) because of cost considerations; however, these files pose serious drawbacks in terms of unequal access to public data.
- An information "gap" would result if Federal data bases were only available to people via the private sector, at a price that discouraged equal access on economic grounds.

RECOMMENDATIONS:

- It is essential that the Federal government improve the more traditional methods of data transmission in order to assure equal access to information while continuing its efforts to meet the demands of new technology in the area of data transmission.
- The Government must assume that technological alternatives to paper copy provide equal public access to that information.

Levitan (1981)

STUDY NAMES: "The Collapse of Traditional Distinctions" and "The New Information Hybrid"

AUDIENCE: Information Scientists

METHOD: Opinion Essay

THEMES:

- Information agents have multiple roles as information producers, users, disseminators, packagers, storers, or retrievers depending on different situations. Public access to certain information services and products, therefore, is dependent on which role the information agent is taking at a specific point in time.

- New models of institutions which are neither public or private are being formed as a result of the Technology Innovation Act (PL 96-480), joint industrial-university research, and joint Government-industrial-university projects.

RECOMMENDATIONS:

- The "Public" and "Private" sectors are better referred to as the "Information Sector," because boundary lines between public and private are no longer operative and tend to focus attention on artificial disputes and wasted resources over such disputes.

Lowi (1972), in Information Technology

STUDY NAME: Government and Politics: Blurring of Sector Lines, Rise of New Elites

METHOD: Opinion Essay

AUDIENCE: Corporate Executives

THEMES:

- Information resources will enhance individual power through interaction and are likely to increase the pluralistic nature of American society.
- The power of new elites will be based on their ability to manipulate information technologies.
- Blurring of the distinctions between public and private spheres may threaten the capacity of Government to act independently to balance private interests. The Government would become indistinguishable from, and indeed, collaborative with, private interests.
- Public policies are likely to become increasingly tailored to the needs of the tightly organized (and well-funded) private groups, and this can have a highly rigidifying effect on the society

RECOMMENDATIONS: None

McClure (1981)

STUDY NAME: Online Government Documents Data Base Searching and the Use of Microfiche Documents Online by Academic and Public Depository Librarians

METHOD: Survey Research

AUDIENCE: Librarians and Information Professionals

THEMES:

- Academic and public depository librarians make little or no use of government documents-related online bibliographic data base searching, because (a) limited access to telecommunications and computer terminals, (b) no money to support such searching, and (c) minimal training of documents librarians in online searching techniques.

- There is also little to no use made of ordering microformatted government documents online through bibliographic vendors, e.g. DIALOG.

RECOMMENDATIONS:

- Academic and public depository librarians must be trained in the use of online bibliographic data base searching and become knowledgeable about the potential benefits of such technologies to improve access to government information.

- Academic and public depository libraries must receive funding for the purchase of appropriate telecommunications and computer equipment if they are to provide access to government information through government documents-related online data bases.

McClure (1982)

STUDY NAME:	Technology in Government Document Collections
METHOD:	Survey Research
AUDIENCE:	Librarians and Information Professionals

THEMES:

- Use and applications of OCLC [an online bibliographic utility], online bibliographic data base searching, microforms, in-house automated information systems, microcomputers, online numeric data bases or other machine-readable data files, and video technology is limited in the GPO depository library program.

- Despite the fact that the depository library program started to receive microfiche in 1977, depository libraries have yet to adequately organize and make available information in this format.

RECOMMENDATIONS:

- If depository libraries are to be charged with the responsibility of providing public access to government information distributed through the GPO depository library program they must be funded to support the purchase of appropriate information technologies, e.g. telecommunications, computers, microcomputers, microfiche to microfiche printers, microform reader-printers, etc.

- Depository librarians must be funded and required to obtain adequate training and new skills related to the information handling technologies if they are to assist clientele to effectively access government information distributed through the depository library program.

- Two broad areas of research must be addressed: (a) development of conceptual models relating technology applications to public access to government information, and (b) assessment of the impact of technology on government depository collections where such applications have either occurred or are being planned.

Myers (1985)

STUDY NAME: The Government Printing Office Cataloging Records: Opportunities and Problems

METHOD: Essay and Analysis of GPO Cataloging Tapes

AUDIENCE: GPO Officials and Documents Librarians

THEMES:

- There are numerous problems with the quality and accuracy of the GPO cataloging tapes that are made available to the public and used primarily by libraries as a means of establishing machine-readable bibliographic records for government publications distributed through the depository library program. These problems relate to: (a) minimal documentation of tape content and format, (b) missing records, (c) duplicate records, (d) non-cataloging of microfiche versions of the document, and (e) no error correction procedures to update tapes.

- Public access to government information is severely impaired because of inadequate machine-readable bibliographic data contained on the GPO cataloging tapes.

RECOMMENDATIONS:

- The GPO cataloging tapes must be "cleaned up," records made reliable, data accurate, and tapes corrected. The author offers specific suggestions for accomplishing these tasks.

Peyton (1981) in U.S. Dept. of Commerce, NTIA

STUDY NAME: The Creation of Information: Property Rights and Subsidies

METHOD: Opinion Essay

AUDIENCE: "Public Policy Makers"

THEMES:

- The principal impact of new information processing and telecommunications technologies on information creation [and public access to government information] has been to make the policy choice between the promotion of property rights or subsidies more difficult for the Federal government.

- The difficulties of enforcing exclusive rights and protection boundaries have, in turn, tended to blunt the effectiveness of copyright and to create a major new source of policy controversy around the production of information goods and services.

- The net effect of technological innovations on the choice between property rights and subsidies, and on the attempt to coordinate them to facilitate information creation and distribution, remains unclear.

RECOMMENDATIONS:

- Private producers may be expected to respond to the legal confusion by placing greater reliance on trade secrecy than would be the case if intellectual property rights were more clearly specified and enforceable.

- There must be clarification of the property rights which prompt the creation and publication of valuable information, since the reliance on greater secrecy contradicts the broad goal of open access to information.

Porat (1977)

STUDY NAME: The Information Economy

METHOD: Survey and Conceptual Research and Review

AUDIENCE: Government Officials and Members of the Information Economy

THEMES:

- The United States now has an information-based economy with the total information activity, including both market and nonmarket transactions, estimated to be 46% of the GNP in 1967.

- A number of information policy issues are more closely akin to social rather than economic concerns and constitute deep-seated values and philosophies.

- There exists no immediate locus of Executive responsibility for information policy and the vertical policy development by individual agencies does not resolve the horizontal impacts and effects of that policy on society and the marketplace [see Figure 2-6].

RECOMMENDATIONS:

- In response to emerging horizontal information policy issues, the Executive Branch should establish an appropriate organization (Bureau of Economic Analysis) to coordinate interdepartmental policy formulation.
- It is clear that meaningful econometric analysis is stalled without systematic time series data, gathered in a consistent, accurate, and timely manner. Research support for such efforts is essential.

Robertson (1981) in U.S. Dept. of Commerce, NTIA

STUDY NAME:	Access to Information
METHOD:	Opinion Essay
AUDIENCE:	"Public Policy Makers"

THEMES:

- Advances in modern technologies such as computers, telecommunications, television and micrographics are working to make government-held information more accessible to the public at far less cost.

RECOMMENDATIONS:

- The Federal Program Information Act (PL 95-220) [intended to establish a way to facilitate effective access to information about the many federal assistance programs] might serve as a model for future retrieval systems. This approach deals with situations which concern the role that the Federal government and possibly private sector firms can play in the dissemination of federally-generated information.

Salaman and Hettinger (1984)

STUDY NAME:	Policy Implications of Information Technology
METHOD:	Opinion-Essay (with some statistical data)
AUDIENCE:	Public Policy Makers

THEMES:

- Review of recent Congressional activities related to information technology policy suggests, in priority listing, (a) emphasis on how technology can assist in improving U.S. economic conditions, (b) maintaining leadership in international trade, and (c) reassessing the policies and laws regarding rights and freedoms associated with information.

- Government information services are available that are competitive with emerging private business offerings.

- Widespread allegations of information piracy are a sign that technology is turning those American laws and customs, which protect intellectual property, into anachronisms.

- The manner in which the U.S. defines property rights for information will, to a large degree, dictates the public's access to such information and the very nature of American society.

- There is a tension between protecting the property rights of the creator of information and public policy that encourages the use and application of that information for the greater benefit of society.

RECOMMENDATIONS:

- The Government must evaluate its role as it becomes a competitor with the private sector and as new technology changes the character of information products and demands a major rebuilding of government information systems.

- Congress must clarify issues related to intellectual property of information in terms of:

  a. conflict between First Amendment and intellectual property rights

  b. the lack of a moral mandate of who "owns" information

  c. public indifference toward "information theft"

  d. establishing property rights related to intellectual matters

- Exclusivity features normally associated with private property may not be appropriate with respect to information; public policy should put more effort into finding those incentives for the creation and dissemination of information which are not counterproductive--as are property rights for created information.

Salvaggio (1983)

STUDY NAME: Social Problems of Information Societies

METHOD: Review Essay

AUDIENCE: Academicians and Public Policy Makers

THEMES:

- Social problems associated with information societies are not a result of information technology but rather an outgrowth of a complex process involving a number of variables: national ideology, existing social norms, the nature of the information infrastructure, policy making bodies, and the marketplace.
- Two opposing models are presented to describe the effects of information technology on society: (a) the competitive approach (U.S.), where technology results from the competitive spirit and the marketplace rather than policy, versus (b) the public utility model (Japan) where technology is developed by private industry with the "guidance" of the Government.
- There are greater opportunities for information inequalities, invasion of privacy, and misuse of information as a result of the competitive model; however, there is greater potential for expanding and developing information technologies than in the public utility model.
- Information policy will not occur in the U.S. until the marketplace finds a need for such regulation, or until issues, such as privacy, security, or information inequalities force the Government to take action.
- Centralized development of information policy in the United States will be difficult because the current authority for such policy is spread over numerous agencies and offices.

RECOMMENDATIONS:

- When Congress decides to enact new laws concerning the collection of and access to, information through new systems, the information infrastructure may have grown to such a complex state that enforcement could be all but impossible.
- If the U.S. continues to develop information technology at the present pace without a public policy and strong regulatory agency, problems in the marketplace and the public demanding greater control over technology are likely to result.

Schwarzkopf (1981)

STUDY NAME: Depository Libraries and Public Access

METHOD: Legislative Tracing and Review

AUDIENCE: Librarians and Government Officials

THEMES:

- Changes in the legislative mandate for the depository library program have been initiated by the library community and not by the Federal government, or more specifically, the Government Printing Office and the Joint Committee on Printing.
- The specific purposes and goals for the depository library program are unclear. However, in recent years the program has been given responsibility for distributing an increasingly large number of government publications to a growing number of audiences.
- As originally conceived, the depository library program was intended to be a cooperative arrangement between the Federal government and the library community with each side expecting equal or greater benefits in comparison to the obligations or expenses it bears. Currently, the burden is more than many libraries can bear.

RECOMMENDATIONS: None

Schweizer (1983)

STUDY NAME: Online Retrieval of Government Documents Using Teletext and Videotext Services

METHOD: Review Essay

AUDIENCE: Librarians and Information Specialists

THEMES:

- There is no coordinated Federal effort to disseminate government-generated data via any of the teletext or videotext systems but several departments or agencies have independently begun to offer data free of charge to viewdata systems.
- Teletext and videotext technologies could enable Federal agencies to provide better information service to a wider group at a potentially lower cost; benefits include ease of use, rapid updating of information, dynamic coverage, and remote delivery of information.

RECOMMENDATIONS: None

Sprehe (1981)

STUDY NAME: A Federal Policy for Improving Data Access and User Services

METHOD: Policy Review

AUDIENCE: Federal Agencies Producing Machine-Readable Data Files

THEMES:

- Users of Federal data files express confusion and exasperation, and note delays and poor bibliograhpic control in trying to locate existing Federal statistics.
- An "Activist Policy," i.e., the idea of promoting, marketing, or pushing the product is one that is somewhat alien and repugnant to many Federal statistical agencies. However, such a policy approach is both appropriate and necessary.

RECOMMENDATIONS:

- Budget lines need to be established for agencies to develop programs of data file access in addition to data file design and development.
- Unless there are compelling reasons to the contrary, such as confidentiality restrictions, the end point in the operations of a Federal statistical program should be defined as the issuance of public use data files.
- Numerous specific policy recommendations are offered under the headings of "Recommended Good Practice" throughout the article on how Federal policy in the area of MRDFs can be improved for increased access to public information.

U.S. Congress. House. Committee on Agriculture (1983)

STUDY NAME: Information Technology for Agricultural America

METHOD: Hearings and Literature review

AUDIENCE: Congress

THEMES:

- The U.S. government has an important role to play in fostering the development of information technologies for use by agricultural America. However, the specific nature and responsibilities associated with that role are not well-defined.

RECOMMENDATIONS:

- Develop multi-faceted computer literacy curriculum programs for agricultural America.
- Increase awareness of the voluminous information offerings available from Government and private sector information providers.
- Conduct long-range studies which explore alternatives for providing remote populations with a range of information delivery mechanisms.
- Promote access to public information for both information providers and end users.

U. S. Congress. Joint Committee on Printing (1984)

STUDY NAME: Provision of Federal Government Publications in Electronic Format to Depository Libraries

METHOD: Survey Research, Interviews

AUDIENCE: Federal Government

THEMES:

- The number of Federal data bases is immense and will increase as agencies find it less expensive to produce information in electronic format.
- With the reduction in costs of evolving technology, most depository libraries will have the capability to access electronic data bases by the late 1980s although many of these libraries are suffering from declining budgets for personnel and resources.

RECOMMENDATIONS:

- The Federal government should provide, as defined in 44 USC 1901, access to Federal information in electronic form through the depository libraries program.
- It seems appropriate to add data bases gradually to the depository library program; this will allow expertise in manipulating electronic data to develop.
- Based on the assumption that it is technologically feasible to provide such access to electronic information, the Ad Hoc Committee recommends that the economic feasibility [of distributing Federal information in electronic format through the depository library program] be investigated through pilot projects.

U.S. Congress. Office of Technology Assessment (1981)

STUDY NAME: Computer-Based National Information Systems

METHOD: Review Essay

AUDIENCE: Congress

THEMES:

- Numerous laws and regulations that directly and indirectly affect the operators and users of information systems, the consumers of information services, and the subjects of personal information data banks, overlap each other and are potentially or actually conflicting.
- There appears to be [in 1981] neither a strong trend nor sentiment among policymakers to develop a uniform Federal information policy that would encompass all the problems that could arise from the many possible uses of data systems.
- There is a lack of focus on information policy as such, and consequently the emerging issues are not directly addressed.
- Continuation of the present situation could inhibit many socially desirable applications of information systems or could create even more intractable policy problems in the future.

RECOMMENDATIONS: None

U.S. Congress. Office of Technology Assessment (1982)

STUDY NAME: MEDLARS and Health Information Policy

AUDIENCE: Federal Government Officials

METHOD: Review Essay

THEMES:

- The possibility that the private sector would be inclined to create MEDLINE if NLM were to cease doing the activity is a matter of speculation.
- The creation of MEDLINE by the Library seems to be warranted by NLM's extensive collection of biomedical materials, by its legislative mandate, and on economic grounds.
- Many of the arguments presented by proponents or opponents on the issues pertaining to the creation, provision, and pricing of NLM products and services seem more reflexive of philosophical perspectives than objective analysis, and there are few empirical data to support them.

RECOMMENDATIONS:

- Any changes in the range of NLM's computerized products or services or in its pricing structure require caution.
- Decisions made today in reaction to current problems should be informed by the ways that technological advances might change those very issues.

U.S. Department of Agriculture (1984)

STUDY NAME: Joint Congressional Hearing on the Changing Information Needs of Rural America: The Role of Libraries and Information Technology

AUDIENCE: Congress

METHOD: Hearings

THEMES:

- Rural America has received poor access to various information services and products in comparison to urban areas; the quality of rural life has decreased because of such disparities; and public/private cooperation will be necessary to redress these disparities.
- A library has an important role to play in the provision of information (including public information) to rural America; however, that role may be different than its current role.

RECOMMENDATIONS:

- Congress has an obligation to keep the information needs of rural America in mind as communications policy is established [Senator Larry Pressler-Utah].

U.S. Department of Commerce, NBS (1983)

STUDY NAME: Future Information Processing Technology - 1983

METHOD: Group Opinion Essay

AUDIENCE: Information Industry and Federal Information Agencies

THEMES:

- Government tends to lag behind private industry in addressing information technology issues because private industry can institute "*de facto*" management techniques, employ "bottom line" thinking as a basis for decision making, and does not have constant changing of senior administrative officials and administrations, with a resulting inability to maintain a long-term planning commitment to a particular management strategy or policy.

- The Paperwork Reduction Act may, in fact, undermine policy continuity since it requires that the individual responsible for Information Resources Management (IRM) within an agency be a senior official. Since those positions are almost always political appointments, the result is that IRM leadership is virtually guaranteed to turn over every 18-24 months.

RECOMMENDATIONS:

- Central [Government] management agencies need to define responsibilities and provide leadership and guidance for Executive Branch agencies regarding the development of information technologies.

U.S. General Accounting Office (1984)

STUDY NAME: Depository Librarians' Views on GPO's Administration of the Depository Library Program

METHOD: Survey Research

AUDIENCE: Federal Officials

THEMES:

- Some 61% of responding depository librarians experienced "great" or "moderate" problems when newly received serials are in microfiche but previous editions are in paper format.
- The quality of the microfiche shipped to depository libraries was generally seen to be of good quality.
- Some 60% of respondents thought the GPO should not develop its own cataloging system but stay with OCLC.

RECOMMENDATIONS: None

U.S. National Commission on Libraries and Information Science (1976)

STUDY NAME: National Information Policy

METHOD: Review Essay

AUDIENCE: Office of the President and other Government Officials

THEMES:

- The Federal government can impact on technological development as: (a) a regulator of the information exchange process, (b) a consumer or user of information, (c) a fundor of information technology research and development, and (d) a policymaker in the broad sense of exercising responsibilities for long range social and economic planning.

RECOMMENDATIONS:

- Establish an Office of Information Policy within the Executive Office of the Presidency.
- Establish an inter-agency council, chaired by the Director of the Office of Information Policy, consisting of designated high level officials in each office.
- Establish a rational policy framework for balancing issues of competition and monopoly in shaping the National information infrastructure.
- Determine appropriate policies and procedures for Federal government procurement and research and development activities because of their impact on information systems.

U.S. National Commission on Libraries and Information Science (1982)

STUDY NAME:	Public Sector/Private Sector Interaction in Providing Information Services
AUDIENCE:	Public Policy Makers
METHOD:	Group Discussion and Summary

THEMES:

- At the present time [1982] there are numerous areas where Federal policies make distinctions regarding information technologies that may impede the private sector in their introduction and services based on them.
- The main thrust of the recommendations in this report is, therefore, toward identifying those policies that would foster interaction with the Federal government. This interaction sees the Federal government providing leadership rather than management, and in partnership rather than in control of the private sectors.

RECOMMENDATIONS:

- A major effort must be made to make policies less sensitive to the underlying technical means of performing information functions.

- Existing mechanisms, such as libraries, should be actively used as primary channels for making governmentally distributable information available to the public rather than creating new governmental units or expanding existing ones.

- The Federal government should provide incentives to those libraries to encourage them to expand their activities in dissemination of governmentally distributable information [recommendations #15, #12, and #27].

U.S. National Commission on Libraries and Information Science (1980)

STUDY NAME: The White House Conference on Library and Information Services - 1979: Final Report

METHOD: Local, State, and National Group Discussion and Review

AUDIENCE: Librarians/Information Professionals and Federal Officials

THEMES:

- The development of a national information policy is essential for the continued strength and well-being of the United States.

RECOMMENDATIONS:

- Federal programs for development and utilization of technology for information storage and retrieval should be coordinated. The public should have access to Federal data bases except when personal privacy or national security are in jeopardy [recommendation C-7].

- The increased application of technological advances should be balanced with an increased awareness of the necessity to humanize such efforts. All plans for future services should review those services both from the technological and human effect point of view. Information in existing national centers or national data bases, not subject to restricted access, should be made available to all libraries on an equal and mutually beneficial basis [recommendation C-7].

- The Federal government should address itself to transferring and applying those technologies [in the public domain] to the storage and dissemination of information by libraries and information centers of all varieties with the goal of guaranteed minimum basic technological access for every individual, organization, or profession [recommendation C-6].

- The Federal government should initiate continuing studies directed at evaluating economic, social, and political consequences of information and data processing technology so that public and private efforts may be made to direct these technologies to the benefit of all [recommendation C-4].

- Private and public sectors should join in furthering research directed toward the development of technological standards [recommendation C-8].

- Funds should be sought which would assure every library of at least one computer terminal connected to an appropriate number of data bases (since only some libraries have been able to avail themselves of such technology) [recommendation C-8].

APPENDIX 2-2

ANNOTATED BIBLIOGRAPHY OF STUDIES EXAMINED

Bikson, Tora A., Barbara E. Quint, and Leland L.Johnson. Scientific and Technical Information Transfer: Issues and Options. Santa Monica CA: Rand Corporation, March, 1984 [Prepared for the National Science Foundation, N-2131-NSF]. 111 pages, includes bibliography.

This study includes an overview and evaluation of current Federal policies and practices, and an assessment of alternative policy options, especially as they relate to the NSF. Its intent is to provide a framework for longer term research and analysis needed in the field to improve Federal Scientific and technical information transfer; the analysis of Federal policy is narrowly focused on STI and specific policy options, per se, are not stressed.

Culnan, Mary J. "The Impact of Technology on Public Access to Public Information." Berkeley: School of Library and Information Studies, University of California, July, 1984 (manuscript). 27 pages, includes bibliography.

This paper was developed as a background position paper for an OTA study on Federal Government Information Technology: Administrative Process and Civil Liberties. It addresses selected policy implications of three issues: (1) the impact of technology on the provision of Government information, (2) the roles that the new technologies open for the private sector in providing public information, and (3) the likely impact on access to public information if electronic-based systems become predominant.

Ganz, Carole, ed. Report of the Working Group on Private Sector/Government Relationships for Scientific and Technical Information. Washington, D.C.: National Science Foundation, June, 1980. 247 pages, includes bibliography. Available from NTIS as PB80-203102.

An empirical study that provides data on Federal scientific technical information centers, examines interactions between Federal and non-Federal STI suppliers, and reviews contemporary economic theory regarding Federal/ non Federal participation in the dissemination of scientific and technical information. This study is a classic and is required background reading related to the topic of the Government provision of STI.

Heim, Kathleen M., "Government-Produced Machine-Readable Statistical Data as a Component of the Social Science Information System: An Examination of Federal Policy and Strategies for Access," in Communicating Public Access to Government Information, edited by Peter Hernon. Westport, CT: Meckler Publishing, 1983, pp. 33-74.

This review article is an excellent overview and analysis of the problems facing librarians in the provision of Federal machine-readable data files. Limited access to this information occurs because: (1) the libraries lack of facilities and competencies, and (2) the Federal agencies' lack of bibliograhpic control, policy, and support to the public to gain access to this information.

Hernon, Peter. "Use of Microformatted Government Publications," Microform Review, 11 (1982): 237-252.

This article reports the results of a survey of political scientists and economists in an academic environment regarding their use of microformatted government documents distributed through the depository library program. Findings suggest that these social scientists regard the increased distribution of government information in microformat as reducing their access to that information. Indeed, a significant number of the respondents indicated that they would not attempt to access the information simply because it was in a microformat.

Hernon, Peter and Charles R. McClure, Public Access to Government Information. Norwood, NJ: ABLEX Publishing Corporation, 1984. 444 pages.

This monograph provides a state-of-the-art review of issues related to the Government provision of public information through the GPO depository library program. Areas considered include the structure of the depository library program the use of information handling technologies, and the development of national information policies. A theme throughout the book is that the depository library program does not provide adequate access to public information.

Information Technology: Some Critical Implications for Decision Makers. New York: The Conference Board, 1972. 240 pages, minimal references.

Although the nine papers in this volume may at first glance appear to be dated, they remain, together, as one of the classic publications on the topic of the impact of information technology on public access. The issues, concerns, and forecasts offered in 1972 are surprisingly up-to-date and show that overall, little progress has been made in dealing with the critical issues related to information technology and public information. Although only two of the papers were reviewed specifically for this topic, the entire volume provides excellent background information and discussion on the role of information technology in society. Valuable charts and conceptual models are included in the concluding paper of the volume.

Levin, Marc A., "Access and Dissemination Issues Concerning Federal Government Information," Special Libraries, 74 (April 1983): 127-137.

This essay argues against the laissez faire development of national information policy, which the author sees as currently being dominated by the private sector. The author believes that unless a national information policy is developed to insure adequate access to government information private sector development of information technologies will create information gaps within the society.

Levitan, Karen B. "The Collapse of Traditional Distinctions," and "The New Information Hybrid," *Bulletin of the American Society for Information Science*, 8 (April 1981); 12-13 and 16, and 25-26.

These two short articles nicely summarize the confusing roles that players in the information economy play. Clear distinctions between public and private sectors may no longer be possible.

McClure, Charles R. "Online Government Documents Data Base Searching and the Use of Microfiche Documents Online by Academic and Public Depository Librarians," *Microform Review*, 10 (1981): 245-259.

This article reports on a survey of academic and public depository librarians' use of government document online bibliographic data bases and ordering/purchase of microformatted government documents online. Findings indicated that these librarians make minimal use of such data bases and rarely order microformatted government publications online. Little use of government documents online bibliographic data bases appears to occur in support of library reference and referral services.

McClure, Charles R. "Technology in Government Document Collections: Current Status, Impacts, and Prospects," *Government Publications Review*, 9 (1982): 255-276.

Survey data on the use of technology in depository libraries suggest that few information handling technologies are currently available in these libraries. What technology is used, is applied only sparingly to assist in providing increased access to government information through the depository library program. Direct support to depository libraries is necessary for them to exploit such technologies.

Myers, Judy E., "The Government Printing Office Cataloging Records," *Government Information Quarterly*, 2 (1985): 27-57.

This article is a summary of the author's experiences with attempting to use the GPO-produced machine-readable cataloging tapes. As currently produced, the tapes have numerous difficulties and impede the likelihood of depository libraries (or others) from using the tapes to enhance bibliographic access to government publications distributed through the GPO. Suggestions are offered for how the quality of the tapes can be improved.

Porat, Marc. *The Information Economy*, 7 vols. Washington, D.C.: GPO: 1977. Includes references, [vol. 1-2 are summary volumes].

This is the classic measurement and description of the information economy in the U.S., based on 1967 data. The report was done for the Office of Telecommunications, Department of Commerce. The goals of the project were to define and measure an "information activity" in the U.S. economy and to examine the structure of the information activity with respect to the rest of the economy. Of special interest to this topic is Chapter 11, in vol. 1 which describes elements of information technology policy and detailed tables of the effects of information technology on specific areas of the economy.

Salaman, R.K., and Hettinger, E. C. *Policy Implications of Information Technology* [U.S. Department of Commerce, National Telecommunications and Information Administration Report 84-144]. Washington, D. C.: Government Printing Office, 1984. 45 pages, includes bibliography.

This report provides background information about information policy and the information industries. It stresses the *opportunities* presented by advanced information technologies as considerations for the development of public policy. The authors provide a useful discussion of the impacts of "intellectual property" issues as they relate to public policy. They also stress the importance of providing policy guidance that *encourages* open and wide availability of information while still protecting the rights of the creator of such information.

Salvaggio, Jerry L. "Social Problems of Information Societies: The US and Japanese Experiences," *Telecommunications Policy*, 7 (September 1983): 228-242.

This article presents conceptual models detailing the differences between a competitor versus public utility development of information technologies and their corresponding impacts on society. It provides a number of insights and analyses that help to explain why information technology and policy have developed thusly in the U.S., and it suggests possible results from this development in terms of privacy, security, information inequalities, and public access.

Schwarzkopf, LeRoy C. "Depository Libraries and Public Access," in *Collection Development and Public Access of Government Documents*, edited by Peter Hernon. Westport, CT: Meckler Publishing, 1981, pp. 7-34.

This article is an historical review of the legislation related to Title 44, *U.S. Code*, as it relates to public access to Government information. It is detailed and thorough and suggests that the purposes and procedures related to the depository library program are unclear and have not been carefully defined.

Schweizer, Susanna. "Online Retrieval of Government Documents Using Teletext and Videotext Services," in *New Technology and Documents Librarianship*, edited by Peter Hernon. Westport CT: Meckler Publisher, 1983, pp. 61-76.

The author reviews the development and applications of teletext and videotext services, discusses their advantages and disadvantages as a means of providing access to information, and briefly reviews recent Federal government applications of this technology. She suggests that there is great potential for the application of this technology in the Government provision of public information.

Sprehe, J. Timothy. "A Federal Policy for Improving Data Access and User Services," *Statistical Reporter* (March 1981): 323-344.

This article discusses the lack of a coherent Federal policy related to the public access of machine-readable data files and makes specific recommendations for the basis of such a policy. The various recommendations could serve as a beginning point for the development of Federal policy related to the provision of public access to Federal data tapes. Appendices include a list of Federal directories to such files and selected data access publications [as of 1981].

U.S. Congress. House. Committee on Agriculture. *Information Technology for Agricultural America* [Committee Print, 97th Congress, 2nd Session]. Washington, D. C.: GPO, 1983. 358 pages. Available from ERIC, ED239-585.

This report, prepared by the Congressional Research Service, is intended to "heighten awareness of numerous governmental and private sector initiatives designed to improve information support for agricultural America." The topics considered are broadly related to agricultural America but can be easily generalized to more pervasive issues related to the impact of technology on access to government information.

U. S. Congress. Joint Committee on Printing. *Provision of Federal Government Publications in Electronic Format to Depository Libraries* (Draft 15) August 24, 1984. 213 pages, includes bibliography.

This document is the summary report from the Ad Hoc Committee on Depository Library Access to Federal Automated Data Bases. The Committee addressed three primary questions in the following manner: (1) What and how much Federal government information is in electronic format? response: immense, but no formal inventory was done, (2) Will depository libraries have the ability to access the new formats? response: based on a survey of depository libraries [data included in report], yes, (3) What are the costs and benefits of providing information in electronic format? response: some benefits listed but no cost information provided. The reports major recommendation is to develop a pilot project to ascertain costs and benefits of providing government publications in and electronic format.

U.S. Congress. Office of Technology Assessment. *Computer Based National Information Systems*. Washington, D. C.: GPO, 1981. 166 pages, includes references and notes.

An excellent overview of background information and key issues related to computer-based technologies and their impact on public policy issues in the areas of (1) innovation, productivity and employment, (2) privacy, (3) security, (4) government management of data processing, (5) society's dependence on information systems, (6) Constitutional rights, (7) regulatory boundaries, (8) computer crime, (9) transborder data flow, (10) information gap [those who would be denied access due to technological illiteracy or other reasons] and (11) computer software protection. The report gives limited attention to how these public policy issues relate to those of *public access*.

U.S. Congress. Office of Technology Assessment. *MEDLARS and Health Information Policy*. Washington, D. C.: GPO, 1982. 150 pages, excellent appendices and list of sources.

Although this report examines MEDLARS and NLM information services and products, its scope is much larger since it provides an excellent discussion of various technology issues related to government provision of public information. Since many of the issues being confronted in this report can be applied to other Federal information services and products, much of the discussion can be generalized. Chapter 5 summarizes findings and offers recommendations. Appendices listing a summary of U.S. information policies, future trends in information technology, and development of computerized bibliographic retrieval systems provide excellent and concise reviews of the topic at hand.

U.S. Department of Agriculture. *Joint Congressional Hearing on the Changing Information Needs of Rural America: The Role of Libraries and Information Technology, July 21, 1982*. Washington, D.C.: GPO, 1984. 83 pages.

Hearings regarding possible applications and the need for information technologies for rural Americans. Testimonies from various individuals suggest that rural Americans are deprived of adequate access to a broad range of information, including, but not limited to Government information. Discussion of some projects by which improved access to public information can be obtained, e.g., the Department of Agriculture's AGNET project.

U.S. Department of Commerce, National Bureau of Standards. *Computer Science and Technology: Future Information Processing Technology-1983* [NBS Special Publication 500-103]. Washington, D.C.: GPO, 1983. 237 pages, minimal references.

This report is a technical forecast of the information processing industry through 1997 developed by a consortium effort from a number of Federal agencies. It includes: (1) forecasts of underlying technologies of hardware and software, (2) cost estimates for computer systems, and (3) current and potential rules and regulations of the Federal government and their impact. The relevance of this topic is its discussion of how the Federal government develops and implements information technologies, with minimal consideration for the impact of such technologies on public access to such information.

U. S. Department of Commerce, National Telecommunications and Information Administration. *Issues in Information Policy*. Washington, D. C.: GPO, 1981. 101 pages, includes bibliographias.

This publication includes six articles related to: (1) how information policies affect individual liberties and societal welfare, and (2) economic efficiency and equity of information. The discussion of the effects of information technology on Government provision of public information is treated only as an aside in these larger contexts.

U.S. General Accounting Office. *Depository Librarians' Views on GPO's Administration of the Depository Library Program* [GAO/AFMD-84-50]. Washington, D.C. GPO, 1984. 40 pages.

The questionnaire used for this survey has only a few questions related to effects of technology on Government provision of information. However, results from those questions indicate some dissatisfaction with the applications of microfiche for use in the depository libraries.

U.S. National Commission on Libraries and Information Science. *National Information Policy*. Washington, D.C.: GPO, 1976. 233 pages, includes bibliography.

This is one of the first major studies conducted by an Executive Branch office [Domestic Council, chaired by Nelson Rockefeller] that provided an assessment and recommendations regarding national information policy. The report provides a broad view of issues and concerns to be addressed by the Government and is excellent background material for any current assessment of national information policies. Specific recommendations are offered.

U.S. National Commission on Libraries and Information Science. *Public Sector/Private Sector Interaction in Providing Information Services*. Washington, D. C.: GPO, 1982. 88 pages, includes bibliography and glossary.

Summary report of a 20 member Ad Hoc Task Force that attempted to define and describe the relationships between the public and private sectors in the provision of information. Many of the recommendations are quite similiar in content to those that have also been suggested by the Information Industry Association. Specific impacts of technology on public access are not detailed but assumed throughout. Heavy reliance is placed on "market solutions" and a non-interference role of the Federal government in the objective of improved public access to government information (Schuman, 1982).

U.S. National Commission on Libraries and Information Science. *The White House Conference on Library and Information Services - 1979: Final Report*. Washington, D.C. GPO, 1980. 101 pages.

This report summaries the process leading to and the activities at the White House Conference on Library and Information Services held in 1979. The document represents an important consensus of elements necessary for a national information policy and of views from the library/information science community about the basic premises for appropriate levels and types of library/information services.

APPENDIX 3-1

SIGNIFICANT LEGISLATION AND DEVELOPMENTS IN THE FEDERAL GOVERNMENT'S PROVISION OF PUBLIC INFORMATION*

1942

The Federal Reports Act provided for the coordination of Federal reporting services, the elimination of duplication, and the reduction in the cost of these services. It also attempted to minimize the burdens in furnishing information to the government.

1945

The Publications Board was created by Executive Order 9568 and charged with bringing to the attention of the Director of War Mobilization and Reconversion scientific and technical information obtained from foreign sources or through war time research sponsored by the Federal government, and to advise him in the release of sponsored research.

To disseminate research findings, the National Advisory Committee on Aeronautics began the scientific report as a supplement to the information contained in scientific journals.

1947

The Atomic Energy Commission initiated a branch on Industrial Information.

1950

The Office of Technical Services, Department of Commerce, began a clearinghouse for the dissemination of Federally sponsored research.

The National Science Foundation Act was passed.

The Federal Records Act provided for the efficient management of Federal records and specified the restrictions placed on the use of these records.

The Berkner Report (to the State Department) was released. It was related to science, foreign relations, and the national flow of scientific and tecnhical information.

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*This Appendix is modeled after "Appendix C: Milestones," in Tora K. Bikson, Barbara E. Quint, and Leland L. Johnson, *Scientific and Technical Information Transfer: Issues and Options*. A Rand Note N-2131-NSF (Santa Monica, CA: The Rand Corp., March 1984, pp. 76-84.

The Medical Science Information Exchange was created to inventory research and development in medicine.

1954

Under the Atomic Energy Act, the Atomic Energy Commission could make information available to American industry and foreign countries.

1956

The National Library of Medicine was established.

1957

The National Research Council established the Office of Critical Tables, which later became the Numerical Data Advisory Board, National Academy of Sciences.

1958

Under the National Defense Education Act, the National Science Foundation began the Science Information Council and Office of Science Information Service.

1959

Office of Management and Budget Circular No. 25 on "user charges" requires that whenever an individual receives a government service which has a benefit exceeding the public good, "a charge should be imposed to recover the full cost to the Federal government of rendering that service."

1960

The Bio-Sciences Information Exchange became the Smithsonian Science Information Exchange.

1962

The Library of Congress began the National Referral Center for Science and Technology to oversee access to Federal research and development activities.

The Depository Library Act was enacted. It expanded the number and type of libraries participating in the GPO program, and provided that selective depositories in states served by regional libraries need only retain publications for five years.

1964

The Federal Property and Administrative Services Act of 1949 was amended. Popularly known as the Brooks Act, it authorized "grants for the collection, reproduction, and publication of documentary source material significant to the history of the

United States. The Act also provided a mechanism in the executive branch for the regulation of agency procurement of data processing equipment.

The Committee on Scientific and Technical Information (COSATI) was established.

The Office of Technical Service was renamed the Clearinghouse for Federal Scientific and Technical Information.

1965

The Educational Resources Information Centers (ERIC) program was established.

1966

The Freedom of Information Act was passed over presidential veto. It required executive branch agencies to make a wide range of documents available to the public.

1967

The National Library of Medicine initiated the Toxicology Information Program.

The Atomic Energy Commission and NASA began to issue Tech Briefs, which provide small firms with research results.

OMB set forth Circular No. A-90 for "cooperating with State and Local governments to coordinate and improve information systems."

1969

The Department of Defense specified that its Information Analysis Centers would charge for their products and services.

The Brooks Act (PL89-306) provided "for the economic and efficient purchase, lease, maintenance, operation, and utilzation of automatic data processing equipment by Federal departments and agencies." In so doing, it amended the Federal Property and Administrative Services Act of 1949 and contains the basic authority relative to Federal data processing resources.

1970

The Clearinghouse for Scientific and Technical Information became the National Technical Information Service (NTIS).

The National Commission on Libraries and Information Services was created.

1972

The Federal Advisory Committee Act opened the meetings of advisory groups to the public.

The highest appellate court of a state was made eligible to receive GPO depository status but was made exempt from having to provide service to the general public.

OMB set forth Circular A-3 on "Government Periodicals"

1974

The Freedom of Information Act was amended and enacted again over presidential veto.

The Privacy Act and the Family Educational Rights Act were enacted. These gave the public the right to obtain information which government agencies held on them.

The Energy Reorganization Act supported the collection, preparation, and dissemination of information on energy alternatives for the promotion of a "full exchange of ideas and criticism that is essential to ... public understanding."

1976

The Government in the Sunshine Act opened the meetings of selected Federal agencies.

The Freedom of Information Act was further amended.

The GPO joined OCLC and began to produce the Monthly Catalog of United States Government Publications in the MARC format.

The GPO became a microform producer and disseminator.

1977

The Federal Program Information Act was passed.

The Printing and Binding Regulations of the JCP were revised.

1978

The Right to Financial Privacy Act established procedures by which government officials could obtain the release of an person's bank records.

The Presidential Record Act covered the ownership, management, custody, and restrictions on access to Presidential records.

The Federal Information Centers Act authorized the establishment of a system of Federal Information Centers across the nation.

The National Telecommunications and Information Administration was established in the Department of Commmerce. It conducts an extensive overview of telecommunications policy making at the

Federal level.

The Copyright law became effective. However, loophole language permits the privatization of knowledge amassed by Federal contractors and grantees.

Amendments to the National Cancer Act require the department of Health and Human Services to publish an annual report on carcinogen research activities.

By public law, accredited law school libraries could join the GPO depository program.

The Office of Management and Budget issued a draft bulletin on the "Dissemination of Technical Information" and Circular A-114 on the "Management of Federal Audiovisual Activities."

The Legislative Branch Appropriations Act (PL 95-94), in part, required Federal agencies to reimburse the Government Printing Office for the cost of printing entries in the _Federal Register_. Previous to that time, the cost was absorbed by appropriations for legislative branch printing and binding. Agencies therefore have begun to scrutinize the extent to which they will publish information in this source (or at all for that matter).

1979

H.R. 4572 and Senate bill 1436 were introduced into Congress. These called for revision of Title 44, _United States Code_, and the printing and distribution of public information.

Federal Government Printing and Publishing: Policy Issues (Washington, D.C.: GPO), which was a report of the Ad Hoc Advisory Committee on Revision of Title 44 to the Joint Committee on Printing, was published.

Information Policy: Public Laws from the 95th Congress (Committee on House Administration) was published. A similar compilation has been issued for each subsequent Congress.

The Office of Management and Budget issued a draft bulletin on "Public Access to Information produced with Federal Funds."

1980

The National Telecommunications and Information Administration published _The Foundations of United States Information Policy_.

Defense Production Act Extension Amendments (PL96-294) requires the Secretary of Energy to coordinate all activities aimed at or involving the dissemination of information with regard to renewable energy resources or energy conservation.

The Ocean Thermal Energy Conversion Act (PL96-320) provided for public access to information regarding ocean thermal energy conversion facilities.

The Wind Energy Systems Research, Development and Demonstration Act (PL96-345) directs the Secretary of Energy to disseminate information on wind energy systems and programs to Federal, state, and local government officials.

The Fusion Energy Research, Development and Demonstration Act (96-386) provides for the dissemination of information on the national magnetic fusion program.

The National Materials and Minerals Policy Act provides for the dissemination of scientific, technical and economic materials information from official and non-governmental sources.

The Paperwork Reduction Act (PL96-511), which became effective on April 1, 1981, directs the Office of Management and Budget to develop Federal information policies and standards, and to reduce the information collection and record keeping requirements that the Federal government imposes on itself and the private sector. The Act also includes provisions for the management of information resources and the auditing of all major governmental information systems. Each agency must designate a senior official to be charged with information management. This person would report directly to the agency head.

1981

The Statistical Reporter in March published "A Federal Policy for Improving Data Access and User Services," which suggests recommendations for information policy.

The Office of Technology Assessment, Congress, published Computer-Based National Information Systems: Technology and Public Policy Issues.

Executive Order 12291 required Federal agencies to prepare a cost-benefit analysis of all proposed guidelines which would have significance or be controversial. OMB would then review the analysis.

President Ronald Reagan imposed a moratorium on the issuance of new periodicals, pamphlets, and audiovisual products.

The Office of Manangement and Budget (OMB) issued Bulletin No. 81-16 expanding the President's declaration and directing a comprehensive review of all existing periodicals, pamphlets, and audiovisual products.

OMB issued Bulletin No. 81-23 covering the reduction or elimination of recurring executive branch reports to Congress.

OMB issued "Review of Federal Publications -- Reform '88'," which summarized the findings of its review of Federal publishing of periodicals and pamphlets.

OMB issued Memorandum 81-14, which directed Federal agencies to reevaluate their information centers to ensure that there was no unnecessary duplication, that these centers did not duplicate information services available from the private sector, or that the cost of the information services was not so low priced that the private sector was impeded from developing similar services.

1982

The GPO decided to limit its sales program only to those titles expected to sell $1,000 or more.

The GPO formed a task force to review the pricing of sales publications and to formulate policy recommendations.

OMB issued a supplement to Bulletin No. 81-16, which provided additional procedures and guidelines for the elimination of unnecessary printing and distribution of periodicals and recurring pamphlets.

The NLM Toxicology Information Program began the Hazardous Substances Information Services for the provision of toxicological information to health officials.

The Office of Technology Assessment publishes Medlars and Health Information Policy. Pages 99-103 contains a brief list of key developments in "U.S. Information Policies."

1983

The GPO initiated a new pricing policy for its sales publications, which set a new pricing formula recognizing an expanded number of product categories and based price, in part, on the size of the publication, reduced cost elements in the pricing formula, used the commercial printing and binding rate, set a new reprint policy, adopted a policy that paper copy publications would be available for sale for an 18 month life cycle ("once priced and placed in inventory, all publications will maintain their prices until sold or declared as excess"), place some subscriptions with total fulfill,ment contractors, and sell diazo duplicate microfiche.

The Joint Committee on Printing issued draft regulations, and later guidelines, covering government printing, binding, and the role of the Superintendent of Documents as a disseminator of public information.

OMB revised Circular A-76, which requires Federal agencies to contract a broad range of administrative activities. "It has been and continues to be the general policy of the government to rely on commercial sources to supply the products and services the Government needs."

INS vs. Chadha struck down the house legislative veto and affirmed the separation of powers clause of the Constitution.

In September OMB solicited public comment about the development of a circular for Federal information management, which reviews and consolidates circulars A-71. A-90, A-108, and A-121. In addition, OMB sought public information about general principles of information resources management (e.g., the economic value of information), competition with the private sector[circular A-76], user charges for information products and services, and so forth. The comments which OMB received will be used to develop a draft circular on information resources management.

1984

The Department of Agriculture began planning a central repository for consumer electronic retrieval of current information

The National Telecommunications and Information Administration published Policy Implications of Information Technology.

The Joint Committee on Printing published its report, Provision of Federal Government Publications in Electronic Format to Depository Libraries, which examines the feasibility and desirability of providing public information in electronic format through depository libraries.

The establishment of the National Archives and Records Administration as an independent agency.

Christopher H. Sterling and Katherine T. Glakas of the Center for Telecommunications Studies, The George Washington University, prepared "Automated Data Processing and Telecommunications in the Federal Government." This compendium of policies and regulations was prepared for the National Science Foundaiton and is being revised by OMB.

APPENDIX 4-1

SELECTED NATIONAL POLICY ISSUES*

1. Formulate collection policies to balance governmental needs against economic, political and social costs.

2. Establish principles for the intra-governmental transfer of information which promote efficiency and provide adequate safeguards.

3. Continue progress toward a more national disclosure system.

4. Develop appropriate legal doctrines to respond to new developments in information use.

5. Write rules to clarify the relationship between Government and the private sector in the production, publication, and dissemination of information.

6. Determine the appropriateness of restrictions on the use and transfer of personal information in the private sector.

7. Consider the proper locus of regulation of information within the Framework of the United States Federal system.

8. Establish a rational policy framework for balancing issues of competition and monopoloy in shaping the national information infra-structure.

9. Determining appropriate policies and procedures for Federal government procurement and research and development activities because of their impact on information systems.

10. Meet the need for interaction among developed countries to strengthen the economic, commercial and social dimensions of information technology.

11. Establish necessary rules and data protection mechanisms to allow continued free flow of information across national boundaries.

12. Respond to the recognition by less developed countries of the importance of information sector economic and social development.

13. Consider the economic implications of the growth of the information sector.

14. Consider the implications of information developments on the institutional relationships between governmental units.

15. Evaluate the political, social and economic implications of information networks and information utilities.

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*National Commission on Libraries and Information Science, National Information Policy (Washington, D.C.: Government Printing Office, 1976).

APPENDIX 4-2

POLICY ISSUES RELATED TO THE DEPOSITORY LIBRARY PROGRAM*

A. SCOPE OF TITLE 44

1. Is title 44 the proper section of the U.S. Code within which the Federal government's information policy should be located?

2. Should title 44 contain only broad policy guidelines and delegate authority for establishing regulations and quantitative requirements (e.g., the quantity of copies of publications to be printed or distributed) to the proper administrative authorities?

3. Should title 44 contain an administrative process for review of decisions made by the Public Printer, the JCP or any other administrative body prior to seeking judicial relief?

4. Should title 44 define procedures which allow persons affected by policy decisions to have input into the formulation of policy?

5. Should Congressional Committees be required to identify, prior to passage, the impact of any legislation on the government's system for the generation, production and dissemination of information?

6. Should the total cost of generating, producing, and disseminating government information be routinely identified and evaluated?

B. ORGANIZATION OF ADMINISTRATIVE AUTHORITY

1. Should there be a central Federal Government Information Office to administer compliance within statutorily prescribed information policy; to provide uniform bibliographic and indexing access to government information; to advise executive agencies on all aspects of their publishing activities; to guarantee public access to documents; to serve as an *ombudsman* on Freedom of Information and Privacy Act matters, and to collect published and non-printed government information?

2. Should there be an officer assigned within each Federal agency to be responsible for the implementation of information dissemination policy?

3. Should there be a public government-owned printing and publishing corporation which operates as an independent entity under Congressional guidelines, serving all branches of government? (Such a corporation, in addition to printing, could operate the sales program and the depository library system, provide bibliographic control of government information, and coordinate and facilitate other activities, e.g., providing demonstration grants to federal agencies to test new information technologies.)

4. Should the revised title 44 establish a National Depository (Library) Agency to administer the depository library program, collect and distribute government publications, act as a library of last resort for the public to access all federal government publications, and insure bibliographic access to all federal government publications?

5. Should there be a single federal office to disseminate and/or coordinate dissemination of all government information?

6. Should the role of the graphic designer be formally recognized in title 44 or in administrative regulations in order to improve the interaction between the designer and the printer?

C. ROLE OF JCP

1. Should the JCP have a greater or lesser role in setting policy and providing oversight (including conducting investigations) for the Federal printing, procurement and dissemination system?

2. If the oversight exercised by the JCP is duplicative of the oversight provided by other Congressional legislative and investigative committees, should the JCP be abolished and these responsibilities consolidated?

3. Should Congress discontinue its regulatory and administrative practices over the Executive and Judicial Branches because of a possible violation of the "Separation of Powers" doctrine?

D. ROLE OF GPO

1. Should the current organizational structure of the GPO be maintained, or should GPO be reorganized into two agencies: one responsible for actual printing and the other responsible for the sale of federal publications, the distribution of government information, and the operation of the federal depository library system?

2. Should GPO be divided into two divisions: one responsible for the production and procurement of Congressional printing and the other responsible for the production and procurement of Executive printing?

3. Should the GPO be only a production operation, and not a procurement operation?

4. Should the GPO be part of the Executive Branch and perform work for the Congress only as a customer?

5. Should GPO print and procure only Congressional work?

6. Recognizing that the Public Printer is currently appointed by the President to head a Legislative Branch Office, should the Public Printer be appointed by the Congress?

7. Should the GPO be given the JCP's responsibility to approve of printing equipment acquisition by federal agencies?

A. PLANNING FOR THE USE OF TECHNOLOGY BY GOVERNMENT

1. Should the government plan for the use of new technology in the printing, procurement and dissemination system, e.g., the use of communication satellites to link procurement and production operations?

2. What provisions for use of technology should be included in title 44?

3. Should title 44 place any limitation on an agency's ability to take advantage of cost-effective technology?

4. Recognizing the trend to capture more original input data at the author's location, should the government plan for its impact on the printing/publishing cycle, including the impact on manpower and competition?

5. Should there be a Federal Clearinghouse for Technology to provide guidance and establish standards for technology use by government?

6. Should the Congress establish a Commission on Printing Technology to advise the Joint Committee on Printing on definitions, including e.g., "printing" and "duplication"?

B. TECHNOLOGY AND LABOR

1. Should the Government have an obligation to retrain and/or reassign workers displaced by new printing technology?

2. Should government employees working in new technologies (e.g., micrographics, word processing) be classified under craft or Civil Service schedules?

3. Should labor and management be given the authority to negotiate working conditions, wages, fringe benefits, etc., under a single title by integrating section 305 of title 44 and title VII of the Civil Service Reform Act?

* FROM: Congress, Joint Committee on Printing, Federal Government Printing and Publishing: Policy Issues (Report of the Ad Hoc Advisory Committee on Revision of Title 44), 1979.

APPENDIX 4-2

(Continued)

4. Should there be a legislative mandate with enforcement mechanisms to ensure that federal agencies provide all federally funded information to the Superintendent of Documents for the depository library program? (For example, an administrative penalty for agency head or printing officer who does not comply with the requirement to provide copies of agency publications for depository distribution).

5. Should all exemptions to Section 1902 be repealed in order to guarantee public access to government information?

6. Should all government information initially published by a private company be distributed to the depository library program?

7. Should the head of an agency have to justify to someone other than himself that a published item is internal and for operational purposes and, therefore, exempt from depository distribution?

8. Should regional depository libraries be able to select two copies of every government publication?

9. If a national Depository Collection is created, should regional depository libraries be authorized to dispose of unneeded, older publications?

10. Should a depository library in a state without a regional depository library be authorized to dispose of unneeded government publications?

C. INDIRECT AND DIRECT FISCAL SUPPORT

1. In addition to paying the cost of distributing publications to the depository system, should the Congress pay all printing costs?

2. Should the Federal government provide direct and/or indirect subsidies to depository libraries?

3. Should the Superintendent of Documents be allowed to purchase selected bibliographic products available only through the private sector for distribution to depository libraries?

4. Should a regional depository library be reimbursed by the Congress for cost of services which are in excess of those provided by non-regional depository libraries?

5. Should the federal government provide depository libraries with equipment needed to store or access information not in the traditional printed formats, e.g., microfiche readers and printers, storage cabinets and computer access equipment?

6. Should the federal government provide grants to depository libraries for the purchase of supplemental indexes, digest, and bibliographic tools needed to use government publications?

7. Should the federal government compensate depository libraries for staff time?

8. Should the federal government provide a toll-free telephone system to permit depository libraries to contact government offices in search of information requested by citizens?

D. INTERNATIONAL EXCHANGE PROGRAM

1. Should the Superintendent of Documents operate the International Exchange Program?

2. Should International Exchange Libraries be allowed to select which publications they receive?

E. MISCELLANEOUS

1. Should the Postal Rate Commission, subject to congressional approval, authorize preferential rates for GPO's mailing of depository library documents?

2. Should GSA locate the Federal Information Centers in depository libraries whenever possible?

3. Should the number of depository library designations available be increased to provide greater public access to government information?

4. Should there be a national public awareness and educational campaign to inform citizens of the depository library program?

A. GOVERNMENT INFORMATION AS A SOCIAL GOOD

1. Should the information generated by the government be considered as an economic good to be dealt with in purely economic terms, or as a social good to be dealt with in purely social terms, or a combination of both?

2. What should be the relationship between the pricing of a publication and the social need for the information?

3. Should GPO be allowed to waive costs for a publication when it is deemed in the public interest to provide the publication free?

B. PRICING POLICY

1. Should there be a single pricing policy for all government information?

2. Should the government establish pricing and subsidy policies which maintain a marketplace for government information?

3. Should any users of government information be subsidized (e.g., small public and school libraries, and not-for-profit institutions)?

4. Should the price of a publication bear the cost of only that publication or should some publications in the sales program be priced so as to subsidize others?

5. Should some Federal publications be sold at prices below actual cost while other publications are sold at prices higher than actual cost?

6. Should the 50 percent add-on component of the GPO pricing formula be eliminated from section 1708 of title 44?

C. FULL COST RECOVERY FORMULA

1. Should the price at which an information product (publication, data base, movie, etc.) is offered for sale to the public reflect the full cost of research, writing, editing, designing, composing, printing and distributing the publication, i.e., a full cost recovery formula?

2. If a full cost recovery policy is adopted, should the originating agency, the U.S. Treasury, the GPO and/or other agency share these recovered costs, including profit?

D. PARTIAL COST RECOVERY FORMULA

1. Should the price at which an information product (publication, data base, movie, etc.) is offered for sale to the public reflect only the cost of riding the original agency print order and distributing the publications?

2. Should users of government publications be directly and/or indirectly subsidized?

3. Should the Congress, the publishing agency, the GPO, or the consumer pay for a direct or indirect subsidy?

4. Should title 44 formally recognize the right of an agency to subsidize the sale of that agency's publications through the Superintendent of Documents?

E. FEDERAL AGENCY SALES PROGRAM

1. Should publishing agencies be full partners with service agencies in setting prices, establishing sales policies, and in sharing the risks of operating a sales program?

2. Should federal agencies determine the impact of free distribution of government information on sales programs?

3. Should an information product be made permanently available once it is in an agency's sales system?

4. Should booksellers and bookstores be given a pricing discount comparable to those given by commercial publishers?

5. Should the purchaser of a publication or the government pay for the cost of indexing and listing sales titles?

APPENDIX 4-2

(Continued)

C. STANDARDS AND COMPATIBILITY OF COMPONENTS

1. Should the Federal government improve its technological capability in the storage, indexing, and related efforts to make various types of information more readily accessible to the public?

2. Should all Federal agencies be required to use the GPO system when composing data contained in a full text data base?

3. Should agencies be encouraged to develop data bases which are flexible and adaptable to various types of equipment for use by all parts of government and the private sector?

4. Should the Federal government create and maintain any full text data base with function codes which limit its use to a specific system or output device?

5. Should title 44 contain any technical standards?

6. Should title 44 facilitate the voluntary compliance by government with relevant nationally adopted technical standards, e.g., the American National Standards Institute and the National Bureau of Standards?

TITLE 44

1. Because of rapid changes in technology, should title 44 be written to allow policy makers to have the widest possible leeway in defining "printing"?

2. Should a definition of printing be in the Regulations or in title 44?

3. Should title 44 specifically include copying and duplicating technologies?

4. Should title 44 contain a process or procedure for amending the definition of "printing"?

A. GOVERNMENT INFORMATION POLICY

1. Should title 44 contain policies and guidelines as to what executive departments and agencies publish (e.g., what to publish, how to publish, and how to disseminate information)?

2. Should mechanisms be used to determine in advance of government publishing what would be of sufficient interest and value to the public to warrant its cost and effort?

3. Should policies be developed which view government information as a resource to be managed in the same way government or the private commercial sector manages its personnel, fiscal, material assets?

B. DISSEMINATION SYSTEMS FOR GOVERNMENT INFORMATION

1. Should all government information be physically accessible to the public without cost through some distribution channel?

2. In addition to participating in the depository library program, should agencies continue to be allowed to use additional methods to distribute their information?

3. Should a central office coordinate the activities of all federal clearinghouses?

4. Should all federal clearinghouses be consolidated?

5. Should there be greater emphasis on using the Federal Information Centers and federal libraries as vehicles for disseminating government information to the public?

6. Should section 1701 of title 44 be amended to require an executive agency to pay its own government information distribution costs?

7. Should non-classified government information be allowed to be withdrawn from public access (e.g., the publication *Market Oriented Program Planning Study*, Mopps Report of December 1, 1977 was withdrawn from depository distribution after the Department of Energy requested GPO to advise depository librarians to destroy the report because it contained erroneous information and was being revised)?

C. ROLE OF GPO

1. Should the GPO be a distributor of information to the public, or should it only have the obligation of making information available to the various dissemination mechanisms?

2. Should title 44 require the Superintendent of Documents to catalog all federally funded information?

3. Should GPO reprint, duplicate, or make available on microfiche government publications which are out of print?

4. Should the Superintendent of Documents sell all Federal documents?

5. Should GPO and other agencies depend upon past marketing responses to determine if a publication is to be sold?

D. BIBLIOGRAPHIC CONTROL OF GOVERNMENT INFORMATION

1. Should title 44 require that non-published materials (including internal records and files) which are subject to disclosure under the Freedom of Information Act be indexed?

2. Should all government agencies be required to participate in a centralized or cooperative bibliographic system?

3. Should government establish and enforce standards for bibliographic and indexing systems of government information (e.g., Computer formats and indexing terminology)?

4. Should all libraries receive federal funds to buy bibliographic tools and government information from commercial and/or public sources?

E. PROTECTION FOR USERS OF GOVERNMENT INFORMATION

1. Should title 44 guarantee anonymity to the users of government information?

2. Should title 44 contain specific safeguards to protect the public from arbitrary actions by government agencies which seek to oversell a program?

F. ROLE OF THE PRIVATE SECTOR

1. Should there be additional governmental guidelines for private publishers' access to governmental information?

2. Under title 44 every publisher has equal access to publications printed through the GPO, should this equal access be provided to all government information?

3. Should the government encourage the development of secondary publishing in the private sector?

4. Should government clearinghouses contract with the private commercial sector to collect, classify, and distribute government information?

A. NATIONAL DEPOSITORY AGENCY

1. Should title 44 establish a National Depository Agency to administer the depository library program, collect and distribute government publications, act as a library of last resort for the public to have access to all federal publications, and to insure bibliographic access to all federal government publications?

B. INFORMATION INCLUDED IN THE DEPOSITORY LIBRARY PROGRAM

1. Should all government information be included in the depository library program?

2. Should all publications produced in whole or in part at government expense (e.g., cooperative, trust-fund, research, contract and grant publications, maps, patents and internal duplicated documents) be included in the depository library system?

3. Should "draft review" publications or publications not fully cleared by an agency be made available to depository libraries?

APPENDIX 4-3

POLICY ISSUES IDENTIFIED BY DAN LACEY*

1. The extension of effective copyright to the new media.
2. The restructuring of our basic telecommunication network from a regulated monopoly to a competitive environment.
3. The reduction of the burden of regulation on broadcasters.
4. The definition of the appropriate role of cable in relation to users, conventional broadcasters, and creators of program material.
5. The establishment of standards for teletext services.
6. The determination of the role of direct satellite broadcasting.
7. The equitable and efficient allocation of the electromagnetic spectrum.
8. Maintaining an adequately funded public broadcast system effectively insulated from political control.
9. The full extension of First Amendment protection to the new media.
10. Protecting the privacy of individuals whose records are included in machine readable data bases.
11. Assuring adequate public access to government information not truly confidential.
12. Maintaining a national library system adequately funded to be able to exploit the information potentials of the new technology.
13. Sustaining an adequate universal postal service with a proper role for the new technology.
14. Achieving an equitable international allocation of the electromagnetic spectrum for uses that transcend national boundaries.
15. Assisting less developed countries in meeting their information needs.
16. Combatting efforts to impose a "New World Information Order" that would impose governmental restraints on the freedom of information.
17. Assuring for American companies abroad non-discriminatory access to sources and consumers of information and to networks and other media of dissemination, and in general promoting the free international flow of information.
18. Achieving an adequate awareness of the new information environment, including adequate computer literacy in the United States.
19. Defining the appropriate roles of government agencies and the private sector in the electronic dissemination of information in data bases created or controlled by the government.

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*Statement of Dan Lacey, Senior Vice President, McGraw-Hill, Inc., on the Information Science and Technology Act of 1981, from Michael Rogers Rubin, ed., Information, Economics, and Policy in the United States (Littleton, CO: Libraries Unlimited, 1983, pp. 332-333.

APPENDIX 4-4

POLICY ISSUES RELATED TO PUBLIC/PRIVATE SECTOR*

Governmental Leadership

Principle 1.—The Federal Government should take a leadership role in creating a framework that would facilitate the development and foster use of information products and services.

The recommendations related to this principle specify several areas in which Government can provide leadership: enhancing the competitive forces of the market-place; affirming the application of the first amendment; providing legislative consistency; using efficient technologies; supporting education, research, and data collection in this field.

Recommendation No. 1.—Provide an environment that will enhance the competitive forces of the private sector, so that the market mechanisms can be effective in allocating resources in the use of information and in directing innovation into market-determined areas.

Recommendation No. 2.—Affirm the applicability of the first amendment to information and services.

Recommendation No. 3.—Encourage Congress to be consistent in the language used and in the application of principles relating to information products and services, such as those identified in this report, when it formulates legislation and when it exercises its oversight role.

Recommendation No. 4.—Encourage Government agencies to utilize the most efficient (information) technologies.

Recommendation No. 5.—Encourage the setting and use of voluntary standards that will not inhibit the further development of innovative information products and services.

Recommendation No. 6.—Encourage and support educational programs that provide the professional skills needed to further the development and use of information as an economic and social resource.

Recommendation No. 7.—Encourage and support both basic and applied research in library and information science.

Recommendation No. 8.—Encourage and support statistical programs and related research to provide the data needed to deal with information policy issues.

Recommendation No. 9.—Conduct a periodic economic assessment of the impact of Federal Government information products and services.

Recommendation No. 10.—Encourage Federal agencies to regard the dissemination of information, especially through the mechanisms of the private sector (both for profit and not for profit), as a high-priority responsibility.

Recommendation No. 11.—Identify and evaluate alternatives to existing Federal information dissemination mechanisms.

Recommendation No. 12.—Develop and support the use of libraries as active means for access to governmental information by the public.

Encouraging Private Sector Investment

Principle 2.—The Federal Government should establish and enforce policies and procedures that encourage, and do not discourage, investment by the private sector in the development and use of information products and services.

Six recommendations are presented as means for implementing this principle. They relate to encouragement of new development, reducing uncertainties, and reducing risks.

Recommendation No. 13.—Identify and eliminate legal and regulatory barriers to the introduction of new information products and services.

Recommendation No. 14.—Encourage private enterprise to "add value" to Government information (i.e., to repackage it, provide further processing services, and otherwise enhance the information so that it can be sold at a profit).

Recommendation No. 15.—Provide incentives to existing organizations, such as libraries and bookstores, that will encourage them to expand their activities in dissemination of governmentally distributable information.

Recommendation No. 16.—Establish procedures that will create a realistic opportunity for private sector involvement in the planning process for Government information activities.

Recommendation No. 17.—Involve the private sector in the process of formulating standards relating to Federal information activities.

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*National Commission on Libraries and Information Science, Public Sector/Private Sector Interaction in Providing Information Services (Washington, D.C.: Government Printing Office, 1982.

from the private sector as part of an information resource, product, or service, must assure that the property rights of the private sector sources are adequately protected.

Availability of Government Information

Principle 5.—The Federal Government should make governmentally distributable information openly available in readily reproducible form, without any constraints on subsequent use.

Recommendation No. 24.—Announce the availability of governmentally distributable information and maintain one or more registers to help the public determine what governmentally distributable information is available.

Recommendation No. 25.—Deposit governmentally distributable information, in whatever form it may be available, at national and regional centers, including regional depository libraries, where it may be examined at no charge.

Recommendation No. 26.—Do not assert any Federal Government copyrights on information the Federal Government makes domestically available.

Pricing of Government Information

Principle 6.—The Federal Government should set pricing policies for distributing information products and services that reflect the true cost of access and/or reproduction, any specific prices to be subject to review by an independent authority.

Use of Private Sector Dissemination Means

Principle 7.—The Federal Government should actively use existing mechanisms, such as the libraries of the country, as primary channels for making governmentally distributable information available to the public.

Recommendation No. 27.—Use the Nation's libraries and nongovernmental information centers as means for distribution of governmentally distributable information instead of creating new governmental units or expanding existing ones.

Government Use of Private Sector Information

Principle 4.—The Federal Government, when it uses, reproduces, or distributes information available

Recommendation No. 18.—Create or improve mechanisms for ensuring that the actions of Government agencies, in developing information resources, products, and services, are consistent with the policies, goals, and long-range plans that are announced.

Government in the Marketplace

Principle 3.—The Federal Government should not provide information products and services in commerce except when there are compelling reasons to do so, and then only when it protects the private sector's every opportunity to assume the function(s) commercially.

The related recommendations are to be considered as integral parts of this principle, since they embody the procedures for determining that there indeed are "compelling reasons" for the Government to provide services in commerce:

Recommendation No. 19.—Announce plans sufficiently ahead of time to provide an opportunity for private sector involvement when a Government agency, for reasons it regards as compelling, should plan to develop and/or to market an information product or service.

Recommendation No. 20.—Review and approve, before implementation, any plans for the Government to develop and/or market an information product or service, the review to be carried out by an agency appropriate to the branch of Government (such as the Office of Management and Budget, General Accounting Office, Congressional Budget Office).

Recommendation No. 21.—Include an "information impact and cost analysis" as part of the process of review, evaluation, and approval of any plans for the Government to develop and/or to market an information product or service, the analysis to cover economic and social effects on potential private sector products and services, and benefits to the public.

Recommendation No. 22.—Review periodically to evaluate the desirability of a continuation of any information product or service as a governmental activity.

Recommendation No. 23.—Do not arbitrarily restrict the Federal Government from enhancement of information products and services, even if solely to meet the needs of constituencies outside the Government itself.

APPENDIX 4-5

ISSUES RELATED TO COMPUTER-BASED INFORMATION SYSTEMS AND SERVICES FOR RURAL AMERICA*

1. GROUP I - Private Sector Information Services

- Will the charges imposed by private sector information providers constitute a barrier for use by the small farmer?
- Can private sector information vendors provide "original information" of the requisite accuracy, completeness, and timeliness, or must they rely (at least in part) on governmental groups?
- Does the range of information required by the farmer and rancher exceed the capacity of existing private sector providers, and if so, what kind of "networking" arrangement is feasible to fulfill such needs?
- To what extent do rural information users require "value added" information which has involved human expert interpretation and repackaging?
- Under what circumstances should there be formal private-public sector collaboration in the provision of information services?
- Will private sector information entrepreneurs strive to develop and offer "user friendly" systems which can optimize ready use by a wide variety of persons in the rural community?
- What provisions for user "feedback" are projected by private sector information providers, so that responsiveness to changing needs can be facilitated?

2. GROUP II - Government Information Services: Management and Marketing

- How can information system design minimize the requirement for hardware acquisition by the user? Are systems being designed which give a particular hardware vendor a captive market?
- Are there formal procedures to insure that system capacity is being used to provide the highest quality analytic routines and the most valuable information, or is this determined by "who gets there first"?
- Is user feedback used effectively to weed items from the data base and to determine priorities for additions to the system?
- What arrangements are needed to minimize duplicative system development efforts among the various State systems and to make State systems compatible with each other?
- What knowledge and skills are necessary to design a statewide computer-based information system? Do traditional Extension organizations possess individuals with these capabilities?
- How does a computer-based information system compare in cost effectiveness with traditional Extension information delivery systems? For the institution? For the user?
- Are rural communication networks of adequate quality to assure access for all potential users of a statewide computer-based information system?
- Will computer-based information systems replace traditional supply channels for certain types of farm inputs or traditional marketing channels for certain farm commodities? What are the implications of this for the farm sector, the input sector, and the marketing sector?

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*Library of Congress, Congressional Research Service. Computer Based Information Systems and Services for Rural America. A pamphlet produced by Robert L. Chartrand and A. Barry Carr for Hearings held by the Subcommittee on Department Operations, Research and Foreign Agriculture of the House Committee on Agriculture, May 19-20, 1982, pp. 7-10.

APPENDIX 4-5

(Continued)

3. GROUP III - Government Information Services: Crop Operations

    - Does the existence of a publicly supported information and management system discourage the development of innovative private sector systems?
    - Are there beneficial ways for public systems and private management information vendors to cooperate in serving the same market without giving someone an unfair competitive advantage?
    - Is there justification for a user fee in public systems or should access be free?
    - Should access to publicly financed systems be open to all or should access be controlled to prevent misuse of the information?
    - Does the information provided in the system require professional interpretation before it can be used? Who should provide this interpretation?
    - What liability is incurred by the information provider for the effects of the recommendations or information provided through the system?
    - Will computer-based information systems replace traditional Extension delivery systems for certain types of information in a way that reduces access to certain segments to the public? How will limited resource clients be served?

4. GROUP IV - User Requirements

    - In what ways can user requirements for various information support systems — interactive, straight data delivery, modeling, calculation — be ascertained initially?
    - Can information entrepreneurs, either governmental or private sector, hold meetings which will serve to orient and educate potential system users regarding the benefits and limitations of computer-supported information systems?
    - Should those providing advanced information services develop mechanisms which can quickly monitor changing user requirements?
    - Has thought been given to distinguishing the types of products and services required in order to meet various categories of user needs for information?
    - Have users of projected systems, in declaring their information requirements, fully understood the cost-performance tradeoffs?
    - Should preliminary surveys of community information needs, as perceived by various potential user groups, be undertaken, since oftentimes there is great variance between what is thought to be needed and that which is actually significant?
    - Could sample "profiles" or needs be created, during a "pilot" system test period, in order to guide both the information providers and the subsequent user community toward the most responsive service?

APPENDIX 4-5

(Continued)

5. GROUP V - System Implementation: Hardware Installation, Training, Maintenance, Software and Data File Modification

   - What options can be offered potential on-line system users in the way of hardware and software?
   - Will there be a quick response, through telephone consultation or site visit, by a system engineer when service is curtailed?
   - Can customer awareness of enhancements to the system be ensured both by displayed notices (on the terminal) and through printed releases?
   - Are user "brush up" sessions planned, either through on-line instruction sessions or by special seminars held in community centers which allow group sharing of problems?
   - How can user requirements for additional data bases best be ascertained and met by information providers?
   - Should newly offered data files, especially those with crossover points to existing on-line files, receive special treatment in terms of user awareness and acceptance?
   - Is there a necessity to have a "local" system support person on call during the early phases of offering an operational service?

6. GROUP VI - Present and Projected Technology

   - Has experience on several "pilot" projects proven that selected information can be disseminated on a cost-effective basis to those in remote areas?
   - Is there known continuing research and development in information technology which holds promise of special benefit for rural users?
   - Should farmer-servicing organizations (associations, etc.) consider conducting colloquia and demonstrations to further enlighten potential users living in non-urban areas?
   - Is a review of existing government-sponsored information services, including those featuring the use of computers and telecommunications, warranted at this time?
   - Should the standardization of information systems, in order to facilitate networking between a number of separate services, be considered by the government or some private sector group?
   - Is there sufficient system utilization data, based upon systematically conducted surveys, to determine cost-performance alternatives for customers in the farming community?
   - Are there user-identified areas where information not currently available should be considered for on-line creation and accessibility?

APPENDIX 4-6

POLICY ISSUES RELATED TO FEDERAL ELECTRONIC FILING SYSTEMS[*]

(A) Public Access:

(1) Will contractual arrangements for electronic filing curtail the ability of the public to have access to government documents now routinely made available in public to documents rooms or otherwise?

(2) Will contractual arrangements for electronic filing systems interfere with public access under the Freedom of Information Act?

(3) Will the maintenance of information in electronic form permit an expansion in the ability of the public to have direct access to public information in government files?

(B) Right and Responsibility of Contractors Operating Electronic Files on Behalf of Agencies:

(4) Is it realistic to expect contractors to operate electronic filing systems for agencies at no cost?

(5) Who owns the data in a contractor-operated electronic file?

(6) If a contractor loses a contract and is replaced by another contractor, what rights, if any, will the first contractor retain over data submitted during the course of the original contract?

(C) Rights and Responsibilities of Submitters:

(7) Will all submitters be required to file documents in electronic form?

(8) Will submitters be required to bear all costs of complying with electronic filing requirements?

(9) Will submitters be offered incentives to use electronic filing methods?

(10) Will submitters be required to convert any past filings to electronic form?

(D) Privitization of Government Functions:

(11) Will contractors operating electronic filing systems be asked or required to reject filings that do not comply with agency requirements? What will be the legal effect of such rejections?

(12) Will contractors operating electronic filing systems be asked to make decisions about the public availability of information or to process Freedom of Information Act request?

(E) Monopoly Issues:

(13) Will the granting of monopoly rights over information distribution be a necessary element of contracts for the operation of electronic filing systems?

(14) Do agencies have legal authority to grant contractors monopoly rights over information or information distribution?

(15) Will operators of electronic filing systems be able to require submitters to purchase the hardware or software necessary to permit electronic filing? How will distribution and pricing be controlled?

(F) Fairness:

(16) In order to induce a contractor to provide an electronic filing system at no cost to the government, will an agency restrict the rights of other parties? Will an agency reject Freedom of Information Act requests for some information, refuse to make information available in electronic form, or charge a high price for disclosure of data in electronic form?

(17) How will an agency prevent a contractor from using or redisclosing confidential data filed electronically?

(18) How will an agency prevent a contractor from using public information filed electronically in a way that will give the contractor an advantage over other information users who can only obtain the data later.

(19) Can the transition to an electronic filing system be conducted in a way so as not to unduly interfere with the operations of existing sellers and distributors of information?

(G) Archives:

(20) Is a record filed solely in electronic form considered to be a record for purposes of the Federal Records Act?

(21) If documents are filed electronically, what is the official agency record?

(22) How long must electronic records be maintained on-line, and how will the records be available when no longer on-line?

(23) How will electronic records be reviewed for archival retention, and in what form will the Archives maintain data deemed important for historical purposes.

(H) Miscellaneous:

(24) Is there a need for the establishment of some government-wide standards for electronic filing systems before different systems are developed independently by several agencies?

(25) Would the granting of exclusive distribution rights as whole or partial payment for the operation by a contractor of an electronic filing system constitute the sale of an agency asset? Would such a transaction violate the law or constitute an augmentation of appropriations?

(26) If an agency arranges through a contract or series of contracts for the operation of a computerized filing system, will there be a circumvention of the procedures required before an agency can acquire a computer for its use?

(27) Will the collection of information in electronic form through a contractor avoid or circumvent any of the requirements of the Paperwork Reduction Act?

(28) If different agencies develop electronic filing systems using different hardware, software, or other important features, will the result be inconsistent and incompatible electronic filing requirements and standards that will increase the costs to the government and the private sector?

(29) What computer security problems are presented by the establishment of electronic filing systems designed for remote telephonic access by multiple users?

(30) How will responsibility be assessed for errors in documents filed electronically? How will errors be identified?

(31) Will the introduction of electronic filing systems be accompanied by new or increased user charges? If so, who will bear the burden of the new charges?●

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[*] Congressional Record, 130 (March 14, 1984): H1614-H1615.

APPENDIX 4-7

POLICY ISSUES RELATED TO THE TRANSFER OF ELECTRONIC DATA TO DEPOSITORY LIBRARIES*

A. Which of the electronically accessible Government produced publications have librarians indicated are of use to the citizens they serve?

B. What networks (library and commercial) do depository libraries regularly access?

C. Could such networks and their sub-systems be used to transmit Government publications electronically?

D. What are the costs and benefits to the libraries in using an electronic format?

E. How will electronic publications affect libraries' information delivery systems?

F. How will scientists, engineers, the business community and other citizens be accessing publications electronically in 1995?

G. What is the outlook for high resolution graphics and text in a single integrated data base?

H. What are the costs for the distribution of publications electronically to members of the depository library system?

I. What options are available for placing equipment in depository libraries?

J. What options are there for providing depository libraries with access to electronic data bases?

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*Congress, Joint Committee on Printing, Provision of Federal Government Publications in Electronic Format to Depository Libraries (Washington, D.C.: Government Printing Office, 1984.

APPENDIX 4-8

CANDIDATE POLICY ISSUES*

1. degree of duplication of information services and products among the Federal agencies

2. funding responsibility for production and dissemination of public information by the Federal government

3. degree to which users are willing and able to pay for public information

4. the effect of information formats on public access to government information

5. the extent to which bibliographic control is maintained over Federal government provision of public information

6. ability of disseminators of public information within the Federal government to obtain appropriate information handling hardware

7. ability of users of public information disseminated by the Federal government to obtain appropriate information handling hardware

8. the degree to which the private sector can market and disseminate Federal government public information

9. ability of Federal government public information disseminators to provide accurate, timely, and understandable information

10. criteria and process by which the Federal government determines which public information will be disseminated

11. the amount and type of public information of the Federal government that should be included in the GPO and other depository library programs

12. appropriateness and extent of Federal policy on the provision of public information

13. planning and evaluation of the production, dissemination, and utility of Federal government public information

14. degree to which public information produced and disseminated by the Federal government fulfills its mission(s) and meets the information needs of the general public

15. appropriateness to which Federal government public information should be disseminated and made available outside the United States

16. the need for the development of standards related to the production, organization, and dissemination of Federal government public information

* Proposed in "Detailed Outline," October 9, 1984 to OTA, by authors.

APPENDIX 4-9

TOPICS (ISSUES) RELATED TO FEDERAL INFORMATION MANAGEMENT

1. General Principles of Information Resources Management
2. Competition with the Private Sector
3. Information Processing Standards
4. Inter-Agency Sharing of Data Processing Facilities
5. Cost Accounting Procedures for Data Processing
6. Least Overall Systems Life Cost
7. User Charges for Information Products and Services
8. Software Management
9. Long Range Planning Processes [for Information Resources Management]
10. Microcomputer Technology, End-User Computing and Office Automation
11. Information Technology for Data Collection
12. Security of Automated Information Systems
13. Maintenance of Records about Individuals
14. Maintenance of Federal Records [Management]
15. Roles of Suppliers, Consumers, and Managers of Information Technology
16. Avoiding Development of Redundant Administrative and Management Systems

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*Office of Management and Budget, "Development of OMB Policy Circular on Federal Information Management; Solicitation of Public Comment," Federal Register, 48 (September 12, 1983): 40964-40965.

APPENDIX 4-10

TOPICS FOR FURTHER RESEARCH

This appendix offers suggestions for additional research related to the Government provision of public information and the effects of information technology on the provision of this information. As has been stated repeatedly throughout this report, there is a general dearth of empirical studies related to this topic. Formal research investigating specific questions, developing conceptual models, and testing specific hypotheses is needed for informed decision making. The following topics are representative of areas where research is needed and are not intended to be comprehensive. Nor are the topics listed in any priority. A summary of the research topics discussed are given in Figure 4A-1.

Selected Topics

RESEARCH TOPIC: Public Information Use Characteristics of Various User Segments of the Population

BRIEF DESCRIPTION:

Although the Department of Agriculture (Congress, Committee on Agriculture, 1983), has sponsored some research on this topic, research that systematically defines specific user segments and then identifies the information needs and information use characteristics of those segments vis a vis public information has not been done for the population at large.

Such studies would call for the validation of a typology of public information user segments and a characterization of the public information needs and information gathering behaviors of each segment (see Chapter 1). Design of information systems which are intended to meet the public information needs of users cannot be effective until specific segments, use patterns, and needs are identified.

RESEARCH OBJECTIVES:

- Identify and validate a typology of public information clientele in terms of specific target markets or segments.
- Identify and characterize the public information needs and information gathering behaviors of each segment.
- Define performance requirements that should be considered in the design of public information systems, services, and products.

FIGURE 4A-1

SUMMARY OF RESEARCH TOPICS DISCUSSED

1. Public information use characteristics of various user segments of the population.

2. Cost-effectiveness studies of different information technologies to provide adequate public information access to specific user segments.

3. Interpretation of existing Federal information policies related to the Government provision of public information.

4. Identify types and formats of public information which the Federal government currently produces and assess how different types of formats affect public access.

5. Assess the effectiveness of the various Government depository libary programs in terms of their collective ability to provide adequate access to public information.

6. Investigate the activities of Federal agencies regarding their "Public Information Office," "User Services" of similiar marketing/training activities regarding information services.

7. The effectiveness of public information collection, organization, and dissemination between Federal and non-Federal government stakeholders in the information sector.

8. Bibliographic control of Government provided information.

9. Define and price information technology value added enhancements that can be attached to Government provided public information.

10. Information gaps for public information.

RESEARCH TOPIC: Cost-effectiveness Studies of Different Information Technologies to Provide Adequate Public Information Access to Specific User Segments

BRIEF DESCRIPTION:

Data that compare the costs and effectiveness of one type of information technology (e.g. machine-readable data files) to another (e.g., microfiche) for the Government provision of public information simply do not exist. Although some studies have attempted to estimate the value of a specific Federal information service (King Research, Inc., 1982), the costs for provision of that information vis a vis other production/delivery types is not known in terms of how that technology affects public access to that information.

Given the current Federal view on developing information services and products on a cost-driven model only, the impact of the technology application in terms of public access and availability is typically ignored. For instance, the switch of the GPO to distributing publications in a microfiche format has been shown to cost less than distribution in paper copy. Studies have not been done that indicate the effectiveness of that decision in terms of enhancing the access and use of this information by the public.

RESEARCH OBJECTIVES:

- Identify specific costs for the collection, organization, and distribution of public information on various types of information technologies.
- Determine the degree to which specific user segments can access the information via each of the information technologies.
- Compute cost-effectiveness ratios between technology costs and user segment access and identify specific strengths and weaknesses of various technologies in terms of access to public information.

RESEARCH TOPIC: Interpretation of Existing Federal Information Policies Related to the Government Provision of Public Information

BRIEF DESCRIPTION

There is general agreement that various Federal policies related to Government provision of public information are interpreted and applied differently. However, the practical results of such differences are not known. Thus, studies can be done that take representative policy statements (e.g., OMB Circular A-76) and describe how individual agencies have interpreted that policy, how those interpretations have affected access to public information, and if the policy had any impacts on the design of information services and products after its establishment.

RESEARCH OBJECTIVES:

- Determine how different Federal agencies have interpreted specific policy statements related to Government provision of public information.

- Identify specific variables within the individual agency that contributed to the manner in which the policy was interpreted.

- Compare and contrast agency interpretations and effects of those interpretations on access to public information.

RESEARCH TOPIC: Identify Types and Formats of Public Information Which the Federal Government Currently Produces and Assess How Different Types and Formats Affect Public Access.

BRIEF DESCRIPTION

The term "public information" is too broad to describe the various types of public information produced by the Federal government. Public information may be characterized by standard criteria such as intended audience, cost, format, type of publication, information needs, or perhaps other factors. Clearly, all public information does not have the same importance or value for resolving the public information needs of various user segments.

While one might assume that because public information is made available at a specific cost or in a specific format the degree to which user segments can access that information successfully may be enhanced or hindered. However, studies have not considered such relationships between public information format and type and degree to access.

RESEARCH OBJECTIVES:

- Describe the range of public information types and formats currently produced by the Federal government.

- Determine if different levels of costs can be associated with the production, organization, or dissemination of these various types and formats of public information.

- Determine if specific public information user segments show preferences for specific types or formats of public information.

- Identify redundancy among types and formats *in terms of specific public information* and the extent to which the public has adequate access to such information.

RESEARCH TOPIC: Assess the Effectiveness of the Various Government Depository Library Programs in terms of their Collective ability to Provide Adequate Access to Public Information.

BRIEF DESCRIPTION:

In general, only the GPO depository library program has received research attention assessing its overall effectiveness (see Figure 4A-2). The other depository library programs operated through the Bureau of the Census, the Patent Office, the United States Geological Survey, and others have received little, if any attention. Thus, there is limited evidence that shows that the various depository library programs, either individually, or collectively, are meeting their objectives or providing adequate access to the public information contained in their program.

A broad perspective of the relationship among the depository library programs is needed. Are there opportunities for resource sharing? Is there duplication and redundancy among the activities of the member libraries? Are they adequately funded to accomplish their stated objectives and provide adequate access to government information? How are the various libraries coordinated? These and other such questions must be answered if the depository library programs are to be assessed in their role of providing access to public information.

RESEARCH OBJECTIVES:

- Assess the degree to which the various depository library programs are meeting their mandated missions.
- Assess the degree to which individual libraries provide adequate access to public information contained in their particular program.
- Compare and contrast the enabling legislation and regulations that administer the various depository library programs looking for contradictions, duplication, gaps, and ambiguities.
- Develop procedures by which the various depository library programs can be better coordinated and administered.

RESEARCH TOPIC: Investigate the Activities of Federal Agencies in Terms of Their "Public Information Officer," "User Services," or Similiar Marketing/Training Activities.

BRIEF DESCRIPTION:

The range and disparity among the types of user support services provided by different Federal agencies should be described and assessed. Although the Gillette Act (PL 89-554) places restrictions on the use of appropriated funds to pay for publicity experts, there is use of "public information officers," "user services," "marketing officers" and other similiar positions to promote the interests of specific information services and products from the various Federal agencies.

FIGURE 4A-2

EFFECTIVENESS OF GPO DEPOSITORIES AND THE DEPOSITORY LIBRARY PROGRAM[*]

AUTHORS	DATE	FINDINGS
Cook[a]	1981	Minimal staffing, reduced budget, and less resources for documents departments compared to other areas of the library.
Fry[b]	1978	Underutilization and nonrecognition of the value of government publications
Heisser, Palmatier, and McClure[c]	1981	Ineffectiveness of the Depository Library Inspection Program and compliance with "minimum standards" by depository libraries
Hernon[d]	1979	Nonuse of government publications by social scientists and small minority of documents account for vast majority of all use
Hernon[e]	1982	Depository collections of microformatted government documents either go unused or a small percentage of the collection receives the most use
Hernon and McClure[f]	1983	Depository library staff answered 37% of the test questions—reference service not of a high quality
Hernon and Purcell[g]	1982	Depositories comprise but one of the information providers to access government information, and oftentimes it is a secondary one. Further, depositories often select more publications than are needed.
Hernon and Shepherd[h]	1982 & 1983	The *Social Sciences Citation Index* contains a minimal number of citations to government publications
Hoduski[i]	1983	Document libraries must publicize and promote documents as well as take political action to affect changes in the depository system or in the local library
McClure[j]	1977	Non-integration of microformatted government documents into the collection as a whole
McClure[k]	1978	Exclusion of many government periodicals from traditional periodical indexes
McClure[l]	1981	Non-integration of government documents into library administrative, reference, and collection development processes
McClure[m]	1981 & 1982	Inability of documents librarians to exploit new technologies such as on-line data base searching, OCLC, and in-house automated systems
McClure[n]	1982	Structural limitations, lack of measurable goals and objectives and meaningful performance measures, and limited evaluation of the effectiveness for the Depository System
McClure and Harman[o]	1982	Limited inclusion of references to government publications in doctoral dissertations
NCLIS[p]	1982	Confusion between the role of the public and private sectors as to responsibilities for acquisition, dissemination, and bibliographic control over government publications
Richardson, et al[q]	1980	Minimal bibliographic access points and in-house findings aids for documents

Sources

[a] Kevin L. Cook, "A Study of Varying Levels of Support Given to Government Documents Collections in Academic Libraries." Master's thesis, University of Oklahoma, 1981.

[b] Bernard M. Fry, *Government Publications: Their Role in the National Program for Libraries and Information Services* (Washington, DC: Government Printing Office, 1978).

[c] David C. Heisser, Roxanne Palmatier, and Charles R. McClure, "GPO Inspection Program," *Government Publications Review*, 7A (1980): 450-452.

[d] Peter Hernon, *Use of Government Publications by Social Scientists* (Norwood, NJ: Ablex Publishing Corp., 1979).

[e] _______, *Microforms and Government Information* (Westport, CT: *Microform Review*, 1981).

[f] Peter Hernon and Charles R. McClure, "Testing the Quality of Reference Services Provided by Academic Depositories: A Pilot Study," in *Communicating Public Access to Government Information*, edited by Peter Hernon (Westport, CT: Meckler Publishing, 1983).

[g] Peter Hernon and Gary R. Purcell, *Developing Collections of U.S. Government Publications* (Greenwich, CT: JAI Press, 1982).

[h] Peter Hernon and Clayton A. Shepherd, "Government Documents in Social Science Literature," in *Collection Development and Public Access of Government Documents*, edited by Peter Hernon (Westport, CT: Meckler Publishing, 1982); and Peter Hernon and Clayton A. Shepherd, "Government Publications Represented in the *Social Sciences Citation Index*," *Government Publications Review*, 10 (1982): 227-244.

[i] Bernadine Hoduski, "Political Activism for Documents Librarians," in *Communicating Public Access to Government Information*, edited by Peter Hernon (Westport, CT: Meckler Publishing, 1983).

[j] Charles R. McClure, "Administraive Integration of Microformatted Government Documents," *Microform Review*, 6 (September 1977): 259-271.

[k] _______, "Indexing U.S. Government Periodicals: Analysis and Comments," *Government Publications Review*, 5 (1978): 409-421.

[l] _______, "Administrative Basics for Microformatted Government Documents Librarians," in *Microforms and Government Information*, edited by Peter Hernon (Westport, CT: *Microform Review*, 1981): 125-145.

[m] _______, "Online Government Documents Data Base Searching and the Use of Microfiche Documents Online by Academic and Public Depository Librarians," *Microform Review*, 10 (Fall 1981): 245-259; and "Technology in Government Documents Collections," *Government Publications Review*, 9 (1982): 255-276.

[n] _______, "Structural Analysis of the Depository System: A Preliminary Assessment," in *Collection Development and Public Access of Government Documents*, edited by Peter Hernon (Westport, CT: Meckler Publishing, 1982).

[o] Charles R. McClure and Keith Harmen, "Government Documents as Bibliographic References and Sources in Dissertations," *Government Publications Review*, 9 (1982): 61-72.

[p] National Commission on Libraries and Information Science, *Public Sector/Private Sector Interaction in Providing Information Services* (Washington, DC: Government Printing Office, 1982).

[q] John V. Richardson, Jr., Dennis C.W. Frisch, and Catherine M. Hall, "Bibliographic Organization of U.S. Federal Depository Collections," *Government Publications Review*, 7A (1980): 463-480.

Source: Charles R. McClure and Peter Hernon, *Improving the Quality of Reference Service for Government Publications* (Chicago: American Library Association, 1983).

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[*] Peter Hernon and Charles R. McClure, Public Access to Government Information (Norwood, NJ: ABLEX Publishing Corporation, 1984), pp. 6-7.

Individual agencies appear to determine the appropriateness of such activities. Clearly, the lines are blurred: is the glossy "public information" made available by NASA promoting NASA's self-interest or is it intended to increase the public's access to government information. No Government-wide guidance is provided to determine if the support of the Bureau of the Census' User Services Division is more or less important that supporting the National Library of Medicine's training services for MEDLINE.

RESEARCH QUESTIONS:

- Identify the specific user support services provided (and the fees for such services) by the various Federal agencies disseminating public information.
- Assess the Federal agency user support services for disseminating public information against their enabling legislation and agency mission.
- Identify, compare, and evaluate the effectiveness of the specific user support services provided by Federal agencies disseminating public information.
- Compare the costs and effectiveness of user support services provided for public information between Federal agencies versus those provided by other stakeholders in the information sector for specific information services and products.

RESEARCH TOPIC: The Effectiveness of Public Information Collection, Organization, and Dissemination between Federal and Non-Federal Government Stakeholders in the Information Sector

BRIEF DESCRIPTION

Porat (1977) has suggested typologies of stakeholders in the information sector but despite the claims and policy statements issued by the Information Industry Association (1983) or individual Federal agencies, there is limited evidence to suggest that non-Federal government stakeholders, either for-profit or not-for-profit, offer public information dissemination services and systems that are "better" or "worse" in meeting information needs of specific user segments of the public.

A frequent complaint voiced by Federal agencies in their attempt to justify waivers for having to use GPO printing facilities is that similiar printing services offering better quality and less delay can be obtained from non-Federal contractors (Kadec, 1984). The number of agencies contracting information collection, organization, and dissemination activities to non-Federal organizations is also on the rise. In both instances, comparative data between the costs and effectiveness of Federal versus non-Federal information services is limited.

RESEARCH OBJECTIVES:

- Determine if non-Federal public information services and products are of "better" or "worse" quality in terms of specific criteria.
- Compare the effectiveness of similiar Federal and non-Federal public information services and systems on specific criteria in terms of resolving information needs of specific user segments.
- Identify the user segments that are targeted by Federal versus non-Federal information services and systems and determine if any patterns emerge relative to disenfranchized segments of the population.
- Determine whether Federal or non-Federal information services and systems are most effective in meeting the information needs of specific user segments.

RESEARCH TOPIC: Bibliographic Control of Government Provided Information

BRIEF DESCRIPTION

Bibliographic control of Government provided public information is essential for adequate access to that information. However, there is considerably more interest on the part of the Federal government to collect and organize public information than there is to provide adequate bibliographic control over that information. Public information, previously available in paper copy, that is now available only in electronic format increases the difficulty that user segments experience in identifying the availability of such information and then gaining access to that information.

Studies are needed that compare the degree of bibliographic control over traditional paper copy public information versus public information in other formats. Studies should also examine the relative quality of Federal bibliographic control systems and procedures versus those used (or produced) by other stakeholders in the information sector; assess the degree of public information generated by the Federal government for which there is inadequate or no bibliographic control; and determine how much bibliographic control may be needed for specific types of public information.

RESEARCH OBJECTIVES

- Compare the degree of Federally provided bibliographic control over specific types and formats of public information: does public information in machine-readable data files have better or less bibliographic control that similiar information in other formats, i.e., microfiche?

- Compare the quality of bibliographic control provided by various stakeholders in the information sector over Government provided public information.

- Identify "bibliographic gaps" for Government provided public information.

- Identify levels of bibliographic control that can provide acceptable access to specific types of public information for specific user segments.

- Determine which stages of public information development require bibliographic control, i.e., which draft of a document entered into an electronic information system, or which version of an electronic data base given the fact that it may be updated and revised on a regular basis.

RESEARCH TOPIC: Define and Price Information Technology Value Added Enhancements That Can Be Attached to Government Provided Public Information

BRIEF DESCRIPTION:

Taylor (1983) clearly suggests that in the life cycle of an information service or product, one can trace the value added enhancements placed on that service or product. Much of the disagreements within the information sector revolve around the degree to which the Federal government should attach value added enhancements on public information services and products, the degree to which such enhancements constitute unfair competition, and the degree to which such enhancements actually increase access to that public information.

Assessment of the degree to which the Federal government provides value added enhancements should be done in the context to the (a) mission of the Federal agency, (b) the costs and benefits for providing a specific value added enhancement, and (c) the degree to which that enhancement increases user segment access to public information.

RESEARCH OBJECTIVES:

- Trace the life cycle of a number of specific Federal information services and products intended to provide public information and identify the value added enhancements attached to that service or product during its life cycle.

- For each value added enhancement which the Federal government provides, what was the corresponding cost, what was its impact on public access to that information, and at what level of enhancement did the service or product result in unfair competition with other information providers in the information sector.

- Compare and assess the value added enhancements that had as a primary objective (a) increasing the administrative effectiveness of the agency, versus (b) increasing user segment access to public information for specific Government information services and products.

RESEARCH TOPIC: Information Gaps for Public Information

BRIEF DESCRIPTION:

The literature recognizes that some information gaps, i.e., user segments that cannot adequately access public information, may already exist in the American society today. However, descriptive information that characterizes these gaps, and offers explanations for the cause of the gaps and strategies to eliminate such gaps is not available. In all likelihood, specially designed public information services, systems, training, and products would have to be established to meet the unique information needs of individuals who are disenfranchized. All stakeholders in the information sector could profit by research addressing these concerns.

RESEARCH QUESTIONS:

- Develop an operational definition of "information gaps" as they relate to the access and availability of Federally provided public information.

- Identify and characterize "information gaps" in the American society in relationship to accessing public information.

- Identify and assess the effectiveness of "safety net" legislation and regulations (see Figure 4-4), e.g. FOIA and the Privacy Act, as a means of guaranteed equal opportunity to public information.

- Provide explanations for why such information gaps have evolved.

- Assess the impact of specific information technologies on the evolution of these information gaps.

- Suggest specific strategies which can be used by the Federal government and other stakeholders in the information sector to eliminate or reduce such information gaps.

BIBLIOGRAPHY

Articles

Abrams, Floyd. "The New Effort to Control Government Information," The New York Times Magazine (September 25, 1983): 22-28, 72-73.

Ballard, Steven C. and Timothy A. Hall. "Theory and Practice of Integrated Impact Assessment: The Case of the Western Energy Study," Technological Forecasting and Social Change, 25 (1984): 37-48.

Becker, Joseph. "U.S. Information Policy," Bulletin of the American Society for Information Science, 4 (August 1978): 14-15.

Cook, Kevin L., "Varying Levels of Support Given to Government Documents Departments in Academic Libraries," College and Research Libraries, 43 (November 1982): 459-471.

"Detroit Public to Sell NTIS Documents to Public," LJ Hotline (June 18, 1984): 3.

Florance, Valeries. "Presidential Policy and Information Dissemination: An Analysis of the Reagan Moratorium on Government Publishing," Government Information Quarterly, 1 (1984): 273-284.

Gell, Marilyn Killebrew. "The Ministry of Truth," Library Journal 106 (February 15, 1981): 399

Hahn, Ellen Z. "Optical Disk Pilot Program," Library of Congress Information Bulletin, 42 (October 31, 1983): 374-376.

Hayes, Robert M., "Politics and Publishing in Washington: Are Our Needs Being Met in the 80s?" Special Libraries, 74 (October 1983) :322-331.

Hernon. Peter. "Use of GPO Bookstores," Government Publications Review, 7A (1980): 283-301.

_________. "Use of Microformatted Government Publications," Microform Review, 11 (Fall 1982): 237-252.

Hoos, Ida R. "Paperwork Control," Society, 16 (November-December 1978):5-8.

"IDM and Other Maneuvers for Position As Japan Nears Deregulation of Its Telecommunications," Wall Street Journal (December 13, 1984), p. 35.

"Joint Committee on Printing: New Regulations Stalled," *Library Journal*, 109 (1984): 1980.

Kadec, Sarah T. "Future Dimensions: Where Do We Go from Here?," *Government Publications Review*, 11 (1984): 413-420.

Kirschten, Dick "In the Budget Trench, OMB Takes Aim at Government Printing Costs," *National Journal*, 15 (December 3, 1983): 2518-2519.

Kuziak, Susan M. "Bothered by Too Much Paperwork? OMB Thinks It Has the Answer," *National Journal*, 12 (Novermber 22, 1980): 1988-1989.

Levin, Marc A. "Access and Disseminate Issues concerning Federal Government Information," *Special Libraries*, 74 (April 1983): 127-137.

Levitan, Karen B. "The Collapse of Traditional Distinctions," *Bulletin of the American Society for Information Science*, 8 (April 1981): 12-13, 16.

__________. "The New Information Hybrid," *Bulletin of the American Society for Information Science*, 8 (April 1981): 25-26.

McClure, Charles R., "Government Publications Education: Issues and Recommendations," *Administrative Notes* [Government Printing Office], 5 (May 1984a): 32-50.

----------. "Proposed Regulations from the Joint Committee on Printing: Patchwork Remedies for Complex Problems," *Government Information Quarterly*, 1 (1984b): 309-326.

---------. "Where Goest Thou NTIS and GPO," *Goverment Publications Review*, 6 (1979): 87-93.

Munro, Kenneth G. "Do We Really Need a JCP?," *Government Computer News* (October 1984): 55.

Myers, Judy E. "The Government Printing Office Cataloging Records: Opportunities and Problems," *Government Information Quarterly*, 2 (1985): 27-57.

"New Title 44 Regulations under Fire," *Library Journal*, 109 (March 15, 1984): 930-931.

North, Gary W. "Maps for the Nation: The Current Federal Mapping Establishment," *Government Publications Review*, 10 (1983): 345-360.

"OMB Relaxing Efforts to Contract Out Agency Services," *The Washington Post* (September 28, 1984), p. A19.

Parker, Edwin B. "Social Implications of Computer/Telecoms Systems," Telecommunications Policy (December 1976): 3-20.

Phillips, William G. "Recodifying Title 44, United States Code: the National Publications Act," Government Publications Review, 7A (1980): 391-398.

"Print Deals Seen Making GPO a Paperless Tiger," The Washington Post (October 2, 1984).

Relyea, Harold C. "Increased National Security Controls on Scientific Communication," Government Information Quarterly, 1 (1984): 177-207.

Richardson, John V. Jr. "The United States Government as Publisher since the Roosevelt Administration, Library Research, 4 (1982): 211-233.

Riche, Martha F. "The State of the States' State Data Centers," American Demographics, 6 (October 1984): 28-37.

Richter, John Henry. "The Review of Title 44, U.S. Code," Special Libraries, 69 (December 1978): 499-500.

Rips, Rae E. "The Reference Use of Government Publications," Drexel Library Quarterly, 1 (October 1965): 3-18.

Rose Frances E., "TELIDON and Canadian Government Information," Government Publications Review, 9 (1982): 345-350.

Rosenau, Fred S. "OMB War on Unnecessary Government Publications Aimes to Increase Efficiency," Phi Delta Kappa, 63 (January 1982):301.

Salvaggio, Jerry L. "Social Problems of Information Societies," Telecommunications Policy, 7 (September 1983): 228-242.

Schnapper, M.B. "Privatizing Government-Funded Information," Government Information Quarterly, 1 (1984): 209-216.

Schuman, Patricia Glass, "Information Justice: A Review of the NCLIS Task Force Report," Library Journal, 107 (June 1, 1982): 1060-1066.

_________. "Social Goals vs. Private Interest," Publishers Weekly (November 23, 1984): 56-58.

Schwarzkopf, LeRoy C. "News from Washington," Government Publications Review, 11 (1984): 439-450.

_________. "The Proposed National Depository Agency and Transfer of the Public Documents Library to the National Archives," Government Information Quarterly, 1 (1984): 27-47.

"The SEC's Plan to Put a Mountain of Paper into a Computer," *Business Week* (April 2, 1984): 72-73.

Smith, Jean. "Information: Public or Private?," *Special Libraries*, 75 (October 1984): 275-282.

Sprehe, J. Timothy. "Developing a Federal Policy on Electronic Collection and Dissemination of Information," *Government Publications Review*, 11 (1984): 353-362.

Stokes, Judith E., "Federal Publications Cutbacks: Implications for Libraries," *Government Information Quarterly*, 1 (1984): 49-57.

Struck, Myron. "Old Printery Undergoes a Makeover: Efficiency Goes Up and So Do Prices," *The Washington Post* (*The Federal Report*) (November 8, 1984).

"Title 44 Revision due for House Review," *Library Journal*, 105 (March 15, 1984): 662-623.

Walbridge, Sharon, "OCLC and Government Documents Collections," *Government Publications Reviews*, 9 (1982): 277-287.

"Who Are You?" *Personal Computing*, 8 (October, 1984): 37-38.

Books

Aluri, Rao and Judith S. Robinson. *A Guide to U.S. Government Scientific and Technical Resources*. Littleton, CO: Libraries Unlimited, 1983.

Bikson, T.K., B.E. Qunit, and L.L. Johnson. *Scientific and Technical Information Transfer: Issues and Options*. A Rand Note N-2131-NSF. Santa Monica, CA: Rand Corp., March 1984.

Chen, Ching-chih and Peter Hernon. *Information Seeking*. New York: Neal-Schuman, 1982.

_________. *Numeric Databases*. Norwood, NJ: Ablex Publishing Corp., 1984.

Clayton, Audrey. *The Potential Influence of Social, Economic, Regulatory, and Technological Factors on Scientific and Technological Communication through 2000 A.D.* Arlington, VA: Forecasting International, Ltd., 1981 [Available through NTIS PB82129917].

Dyrenfurth, Michael J. *Literacy for a Technological World*. Columbus, OH: National Center for Research in Vocational Education, 1984 [Available through ERIC 241-715].

The Federal Data Base Finder: A Directory of Free and Fee-Based Data Bases and Files Available from the Federal Government. Potomac, MD: Information USA, 1984.

Garay, Ronald. *Congressional Television*. Westport, CT: Greenwood Press, 1984.

Hernon, Peter. *Microforms and Government Information*. Westport, CT: Microform Review, 1981.

_________ *Use of Government Publications by Social Scientists*. Norwood, NJ: Ablex Publishing Corp., 1979.

_________ and Charles R. McClure. *Public Access to Government Information: Issues, Trends, and Strategies*. Norwood, NJ: Ablex Publishing Corp., 1984.

_________ and Gary R. Purcell. *Developing Collections of U.S. Government Publications*. Greenwich, CT: JAI Press Inc., 1982.

_________, Charles R. McClure, and Gary R. Purcell. *GPO's Depository Library Program: A Descriptive Analysis*. Norwood, NJ: Ablex Publishing Corp., forthcoming.

House, Peter W. *The Art of Public Policy Analysis*. Beverly Hills, CA: Sage Publications, 1982.

Information Technology: Some Critical Choices for Decision Makers. New York: The Conference Board, 1972.

King Research, Inc., *Value of the Energy Data Base*. Rockvill, MD: King Research, Inc., 1982 [Available through NTIS as DE82014250].

McClure, Charles R. and Peter Hernon. *Improving the Quality of Reference Service for Government Publications*. Chicago, IL: American Library Association, 1983.

Mason, Marilyn Gell. *The Federal Role in Library and Information Services*. White Plains, NY: Knowledge Industry Publications, Inc., 1983.

Merritt, LeRoy C. *The United States Government as Publisher*. Chicago, IL: University of Chicago Press, 1943.

Morehead, Joe. *Introduction to United States Public Documents*. 3rd. ed. Littleton, CO: Libraries Unlimited, 1983.

Rubin, Michael Rogers, ed. *Information Economics and Policy in the United States*. Littleton, CO: Libraries Unlimited, 1983.

Taylor, Robert S. *Value Added Processes in the Information Life Cycle* [Final Report, National Science Foundation Grant No. IST 81-06080]. Syracuse, NY: Syracuse University, School of Information Studies, 1983.

Zink, Steven D. *United States Government Publications Catalogs*. New York: Special Libraries Association, 1982.

Zwirn, Jerrold. *Congressional Publications: A Research Guide to Legislation, Budgets, and Treaties*. Littleton, CO: Libraries Unlimited, 1983.

Contributions to Books

Crecine, John P. and Ronald D. Brunner. "Government and Politics: A Fragmented Society, Hard to Govern Democratically -- From Another Vantage Point," in *Information Technology: Some Critical Implications for Decision Makers*. New York: The Conference Board, 1972, pp. 149-181.

Dukakis, Arthur G. and Judith W. Cohen. "Data Available from the U.S. Bureau of the Census," in *Numeric Databases*, edited by Ching-chih Chen and Peter Hernon. Norwood, NJ: Ablex Publishing Corp., 1984, pp. 125-153

Glaser, Edward. "Information Technology: Power without Design, Thrust without Direction," in *Information Technology: Some Critical Implications for Decision Makers*. New York: The Conference Board, 1972, pp. 22-35.

Hampel, Viktor E., "Fact Retrieval in the 1980s," in *What Should Users Expect from Information Storage and Retrieval Systems in the 1980s?* Paris: Advisory Group for Aerospace Research & Development, NATO, 1981 [AGARD CP-304].

Heim, Kathleen M. "Government-Produced Machine-Readable Statistical Data As a Component of the Social Science Information System: An Examination of Federal Policy and Strategies for Access," in *Communicating Public Access to Government Information*, edited by Peter Hernon. Westport, CT: Meckler Publishing, 1983, pp. 33-74.

--------. "Government-Produced Statistical Data for Social Science Inquiry: Scope, Problems, and Strategies for Access," *Numeric Data Bases*, edited by Ching-Chi Chen and Peter Hernon. Norwood, NJ: Ablex Publishing Corporation, 1984, pp. 105-124.

Lacey, Dan. "The Information Science and Technology Act of 1981," in *Information, Economics, and Policy in the United States*. Littleton, CO: Libraries Unlimited, 1983, pp. 332-333.

Lowi, Theodore. "Government and Politics: Blurring of Sector Lines, Rise of New Elites," in *Information Technology: Some Critical Implications for Decision Makers*. New York: The Conference Board, 1972, pp. 131-148.

McDonald, Dennis D. "Public Sector/Private Sector Interaction in Information Services," in *Annual Review of Information Science and Technology*, vol. 17, edited by Martha E. Williams. White Plains, NY: Knowledge Industry Publications, 1982, pp. 83-98.

McHale, John. "The Changing Information Environment: A Selective Topology," in *Information Technology: Some Critical Implications for Decision Makers*. New York: The Conference Board, 1972, pp. 183-238.

Morehead, Joe. "The Uses and Misuses of Information Found in Government Publications," in *Collection Development and Public Access of Government Documents*, edited by Peter Hernon. Westport, CT: Meckler Publishing, 1982, pp. 57-71.

Purcell, Gary R. "The NTIS Micropublishing Program," in *Microforms and Government Information*, edited by Peter Hernon. Westport, CT: Microform Review, 1981, pp. 70-91.

-------. "Technical Report Literature," in *Public Access to Government Information*, by Peter Hernon and Charles R. McClure. Norwood, NJ: Ablex Publishing Corp., 1984, pp. 166-182.

Robertson, Lawrence S. "Access to Information," in *Issues in Information Policy*. Special Publication of National Telecommunications and Information Administration. Washington, D.C.: GPO, 1981, pp. 19-36.

Schwarzkopf, LeRoy C. "Depository Libraries and Public Access," in *Collection Development and Public Access of Government Documents*, edited by Peter Hernon. Westport, CT: Meckler Publishing, 1982, pp. 7-33.

Schweizer, Susanna. "Online Retrieval of Government Documents Using Teletext and Videotext Services," in *New Technology and Documents Librarianship*, edited by Peter Hernon. Westport, CT: Meckler Publishing, 1983, pp. 60-76.

Tate, Michael L. "White Man Speaks with Forked Tongue: American Indian Discontent with Government Reports," in *Communicating Public Access to Government Information*, edited by Peter Hernon. Westport, CT: Meckler Publishing, 1983, pp. 93-107.

Zurkowski, Paul. "The New Information Agenda in Washington: Some Case Studies from the Private Viewpoint," in *The Right to Information*, edited by Jane Varlejs. Jefferson, NC: McFarland & Company, 1984, pp. 37-53.

Pamphlets

Information Industry Association. *Meeting Information Needs in the New Information Age*. Washington, D.C.: Information Industry Association, 1983.

"Information Needs for Modern Agriculture." Proceedings from a symposium hoses by Agnet, Lincoln, Nebraska 7-9, 1983. Lincoln, NE: University of Nebraska, Central AGNET, 1983.

Intellectual Property Owners Inc., "IPO Opposes Charging of Fees for the Public to Obtain Access to Federal and Patent Trademark Records." Washington, D.C." IPO, September 5, 1984 (mimeograph).

Public Citizen's Open Government. *Gasping for Information at Reagan's EPA*. Washington, D.C.: Public Citizen's Open Government Project, 1984a.

-------. *Lights out at DOE*. Washington, D.C.: Public Citizen's Open Government, 1984b.

-------. *Starving for Nutrition Information from Reagan's USDA*. Washington, D.C.: Public Citizen's Open Government Project, 1984c.

Sterling, Christopher H. and Katherine T. Glakas. *Automated Data Processing and Telecommunications in the Federal Government*. Prepared for the National Science Foundation. Washington, D.C.: The George Washington University, Center for Telecommunications Studies, 1984.

U.S. Government Distributed Publications

Ad Hoc Committee on Revision of Title 44, *Federal Government Printing and Publishing: Policy Issues*, U.S. Government Printing Office, 1979.

Administrative Notes (Washington, D.C.: GPO), 4, number 16 (October 1983): 3.

Bureau of the Census. "Centdata: The Census Bureau's Online Information Service." October 1984 (news release).

Case, Donald, et. al. *Stanford Evaluation of the Green Thumb Box Experimental Videotext Project....* Springfield, VA: NTIS, 1981 (PB82 190281).

Chartrand, Robert L and Madeline Seidner. "Information Services for Agriculture: The Role of Technology." Report No. 84-90S. Washington, D.C.: Library of Congress, Congressional Research Service, May 17, 1984.

Chen, Ching-chih and Peter Hernon. "Criteria of Effectiveness for Network Delivery of Citizens Information through Libraries." Washington, D.C.: Department of Education, Office of Libraries and Learning Technology, September 1982.

Congress. House. Committee on Agriculture. *Information Technology and Agricultural America*. Washington, D.C.: GPO, 1983.

Congress. House. Government Operations Committee. Government Provision of Information Services in Competition with the Private Sector. Washington, D.C.: GPO, 1982a.

Congress. Joint Committee on Printing. Federal Government Printing and Publishing: Policy Issues: Report of the Ad Hoc Advisory Committee on Revision of Title 44. Washington, D.C.: GPO, 1979.

Congress. Joint Committee on Printing. Printing and Binding Regulations. Washington, D.C.: JCP, 1977.

Congress. Joint Committee on Printing. Provision of Federal Government Publications in Electronic Format to Depository Libraries. Washington, D.C.: GPO, 1984.

Congress. Office of Technology Assessment. Computer-Based National Information Systems: Technology and Public Policy Issues. Washington, D.C.: GPO, 1981a.

Congress. Office of Technology Assessment. MEDLARS and Health Information Policy. Washington, D.C.: GPO, 1982b.

Congress. Senate. Committee on Foreign Relations. International Telecommunications and Information Policy: Selected Issues for the 1980s. [Committee Print]. Washington, D.C.: GPO, 1983b.

Congress. Senate. Senate Committee Records: A Guide to Disposition and Public Access. Washington, D.C.: Senate, April 1981b.

DeMuth, Christopher. "Memorandum for Senior Officials for Information Resources Management." A Memorandum of the Office of Management and Budget, October 28, 1983, and January 27, 1984.

Department of Agriculture. Joint Congressional Hearing on the Changing Information Needs of Rural America: The Role of Libraries and Information Technology, July 21, 1982. Washington, D.C.: GPO, 1984.

Department of Commerce. National Bureau of Standards. Computer Science and Technology: Future Information Processing Technology -- 1983. Washington, D.C.: GPO, 1983.

Department of Commerce. National Telecommunications and InformationAdministration. Issues in Information Policy. Washington, D.C.: GPO, 1981.

"Cendata: The Census Bureau's Online Information Service." Washington, D.C.: Bureau of the Census, October 1984 (Press Release).

English, Glenn. "Electronic Filing of Documents with the Government: New Technology Presents New Problems," Congressional Record, 130 (March 14, 1984): H1614-H1615.

Fry, Bernard M. Government Publications: Their Role in the National Program for Library and Information Services Prepared for the National Commission on Libraries and Information Science. Washington, D.C.: GPO, 1976.

Ganz, Carole. Report of the Working Group on Private Sector/Government Relationships for Scientific and Technical Information. Washington, D.C.: National Science Foundation, 1980 (also available from NTIS, PB80-203102).

General Accounting Office. Depository Librarians' Views on GPO's Administration of the Depository Library Program. Washington, D.C.: GPO, 1984.

General Accounting Office. "Federal Information Systems Remain Highly Vulnerble to Fraudulent, Wastful, Abusive, and Illegal Pracatice," Eric, ED223255 (April 1982).

General Accounting Office. The Government Printing Office Can More Effectively Manage Its General Sales Program. Gaithersburg, MD: GAO, 1983a.

General Accounting Office "Implementing the Paperwork Reduction Act: Some Progress, but Many Problems Remain," NTIS, PB83-204586 (April 1983b).

Government Printing Office. Federal Documents Data Base: Detailed Functional System Requirements, 2 vols. Washington, D.C.: GPO, 1983.

Guidelines for the Depository Library System. Washington, D.C.: GPO, 1977.

INS v. Chadha, 102 S. Ct. 2764 (1983)

Library of Congress. Congressional Research Service. Computer Based Information Systems and Services for Rural America. Produced for hearings held by the Subcommittee on Department Operations, Research and Foreign Agriculture of the House Committee on Agriculture, 1982.

Library of Congress. Congressional Research Service. Information Technology for Agricultural America. Prepared for the Subcommittee on Department Operations, Research and Foreign Agriculture. 97th Congress, 2d sess. Committee Print, 1982 (also ERIC ED 239 585).

"Memorandum on Review of Federal Publications -- Reform 88," issued by Jospeh R. Wright, Jr. Washington, D.C.: OMB, October 8, 1982.

National Commission on Libraries and Information Science. *Annual Report 1982-1983: Meeting Changing Needs*. Washington, D.C.: GPO, 1984.

National Commission on Libraries and Information Science. *National Information Policy*. Washington, D.C.: GPO, 1976.

National Commission on Libraries and Information Science. *Public Sector/Private Sector Interaction in Providing Information Services*. Washington, D.C.: GPO, 1982.

National Commission on Libraries and Information Science. *The White House Conference on Library and Information Services -- 1979: Final Report*. Washington, D.C.: 1980.

National Publications Act of 1979 prepared for the Committee on House Administration in relation to H.R. 5424, U.S. Government Printing Office, 1979.

National Publications Act of 1980 Report by the Committee on House Administration, U.S. Government Printing Office, 1980.

National Technical Information Service. *General Catalog of Information Services No. 8a*. Springfield, VA: NTIS, 1983.

Office of Management and Budget. "Development of an OMB Policy Circular on Federal Information Management: Solicitation of Public Comment," *Federal Register*, 48 (September 28, 1983a): 40964-40965.

--------. *A Five-Year Plan for Meeting the Automatic Data Processing and Telecommunications Needs of the Federal Government*, 2 vols. Washington, D.C.: GPO, 1984.

--------. "Improved Management and Dissemination of Federal Information: Request for Comment," *Federal Register* 45 (June 9, 1980): 38461-38463.

--------. "Improving Government Information Resources Management," *NTIS*, PB82-183542 (March 1982).

--------. *Major Information Technology Systems Acquisition Plans of Federal Executive Agencies, 1983-1988*. Washington, D.C.: GPO, 1983b.

--------. *Public Access to Information Produced with Federal Funds* [Bulletin]. Washington, D.C.: OMB, no date.

"Outlook for Expanding the Federal Research in Progress System (FERIP)," General Accounting Office, 1984 (letter to Senator Lloyd Bensten, October 22, 1984).

Porat, Marc. *The Information Economy*. 7 vols. Washington, D.C.: GPO, 1977.

President's Private Sector Survey on Cost Control. Report on Automated Data Processing/Office Automation. Washington, D.C.: GPO, 1983.

President's Private Sector Survey on Cost Control. Report on Publishing, Printing, Reproduction and Audiovisual Activities. Washington, D.C.: GPO, 1983.

Salaman, R.K. and Hettinger, E.C. "Policy Implications of Information Technology," National Telecommunications and Information Administration Report No. 84-144, Washington, D.C.: National Telecommunications and Information Administration, U.S. Department of Commerce, 1984.

Sprehe, J. Timothy. "A Federal Policy for Improving Data Access and User Services," Statistical Reporter (March 1981): 323-344.

Young, Arthur " The Impact of the Paperwork Reduction Act of 1980 on ADP in DoD," NTIS, AD-A09786716 (March 1981).

Unpublished Reports

Culnan, Mary J. "The Impact of Technology on Public Access to Public Information." Prepared for a study on Federal Government Information Technology: Administrative Process and Civil Liberties. Washington, D.C.: Office of Technology Assessment, U.S. Congress, July 1984.

Miscellaneous

Knenlein, Donald R., Director, Federal Information Center Program Division, General Services Administration, sent a letter to Peter Hernon, dated October 7, 1983.